Electronic Acknowledgement Receipt

EFS ID:	38531612
Application Number:	16785423
International Application Number:	
Confirmation Number:	9490
Title of Invention:	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA
First Named Inventor/Applicant Name:	Bjorn Markus Jakobsson
Customer Number:	21912
Filer:	Yeu-Ting George Cheng/Elaine Nguyen
Filer Authorized By:	Yeu-Ting George Cheng
Attorney Docket Number:	MJAKP016C2
Receipt Date:	07-FEB-2020
Filing Date:	
Time Stamp:	19:06:12
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	MJAKP016C2_ADS.pdf	1793701 c2f0d997f564f7b19d16c68ded5ce4dd89bcae86	no	8

Warnings:

Information:					
2	Specification	MJAKP016C2_APP.pdf	208194 e2c777de60c944463c77ea8556929448228 7ee3e	no	37
Warnings:					
Information:					
3	Drawings-only black and white line drawings	MJAKP016C2_APP_Figures.pdf	75657 af3be34cecef192a6396ddb70a1123fd48ef ba5d	no	16
Warnings:					
Information:					
			Total Files Size (in bytes):	2077552	

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

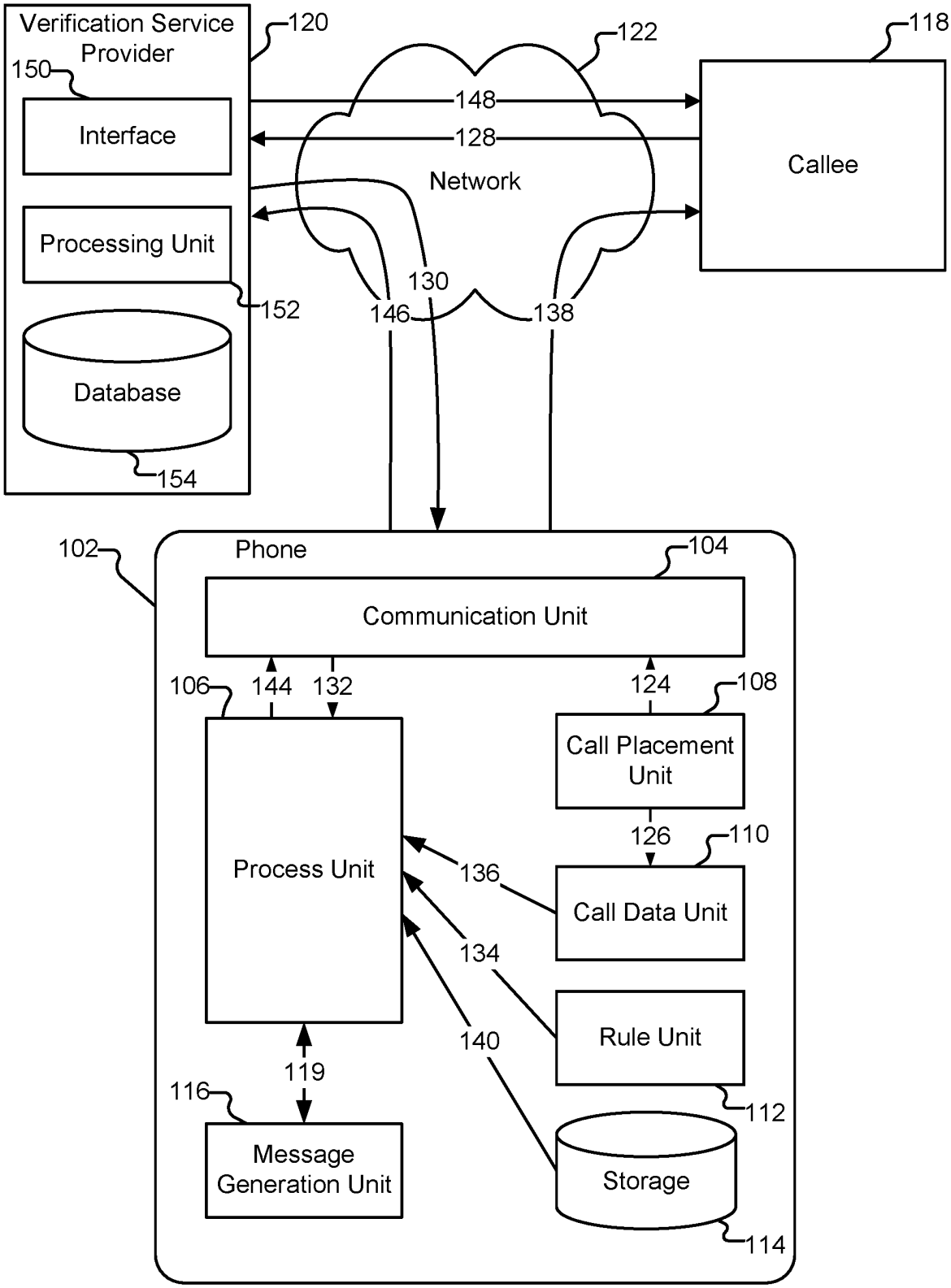
Verification Service Provider
120
150
Interface
Processing Unit
152
Database
154
122
148
128
Network
130
146
138
118
Callee
102
Phone
104
Communication Unit
106
144
132
124
108
Call Placement Unit
126
110
Process Unit
136
Call Data Unit
134
Rule Unit
140
112
119
116
Message Generation Unit
Storage
114

FIG. 1

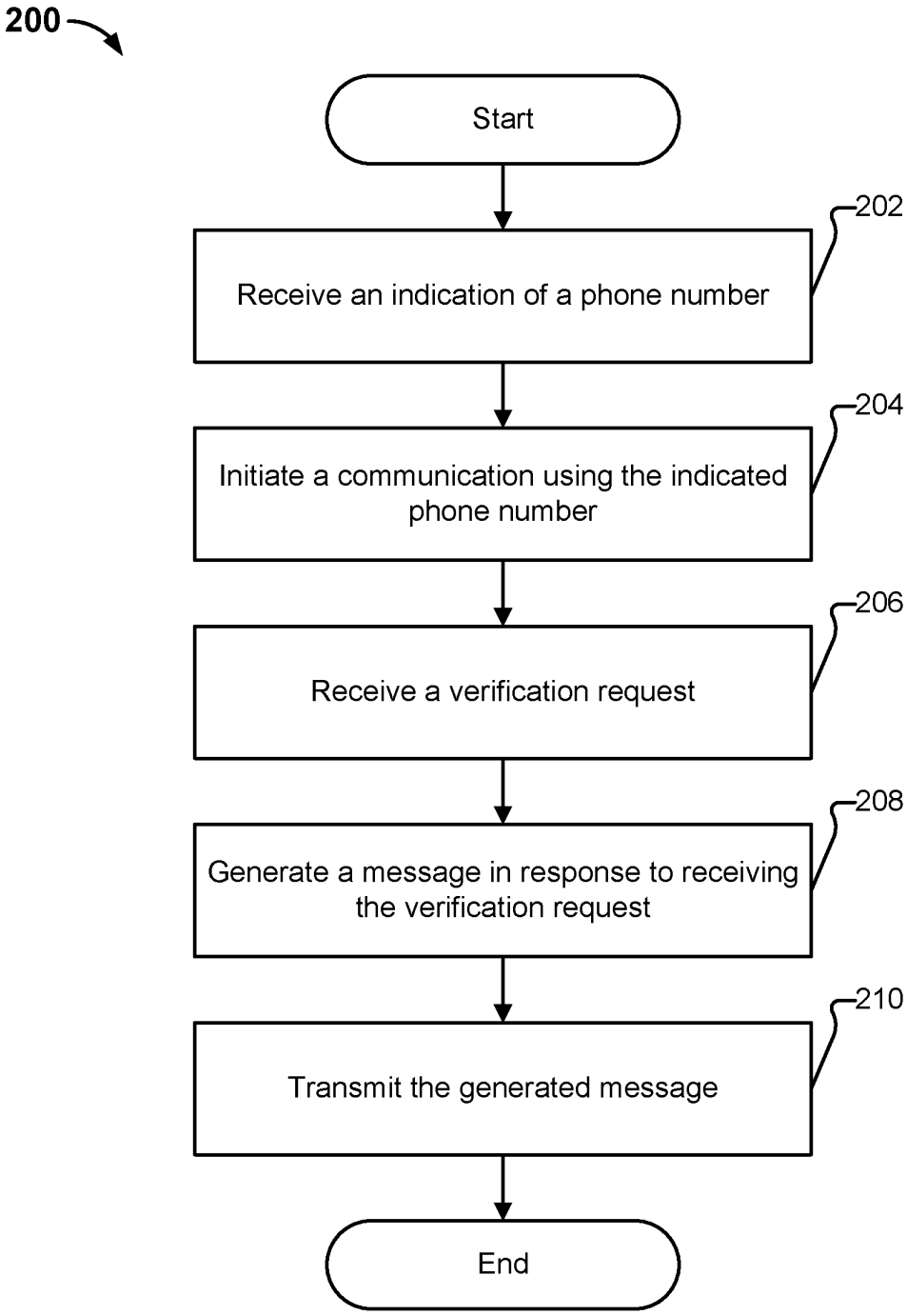
200
Start
202
Receive an indication of a phone number
204
Initiate a communication using the indicated phone number
206
Receive a verification request
208
Generate a message in response to receiving the verification request
210
Transmit the generated message
End

FIG. 2A

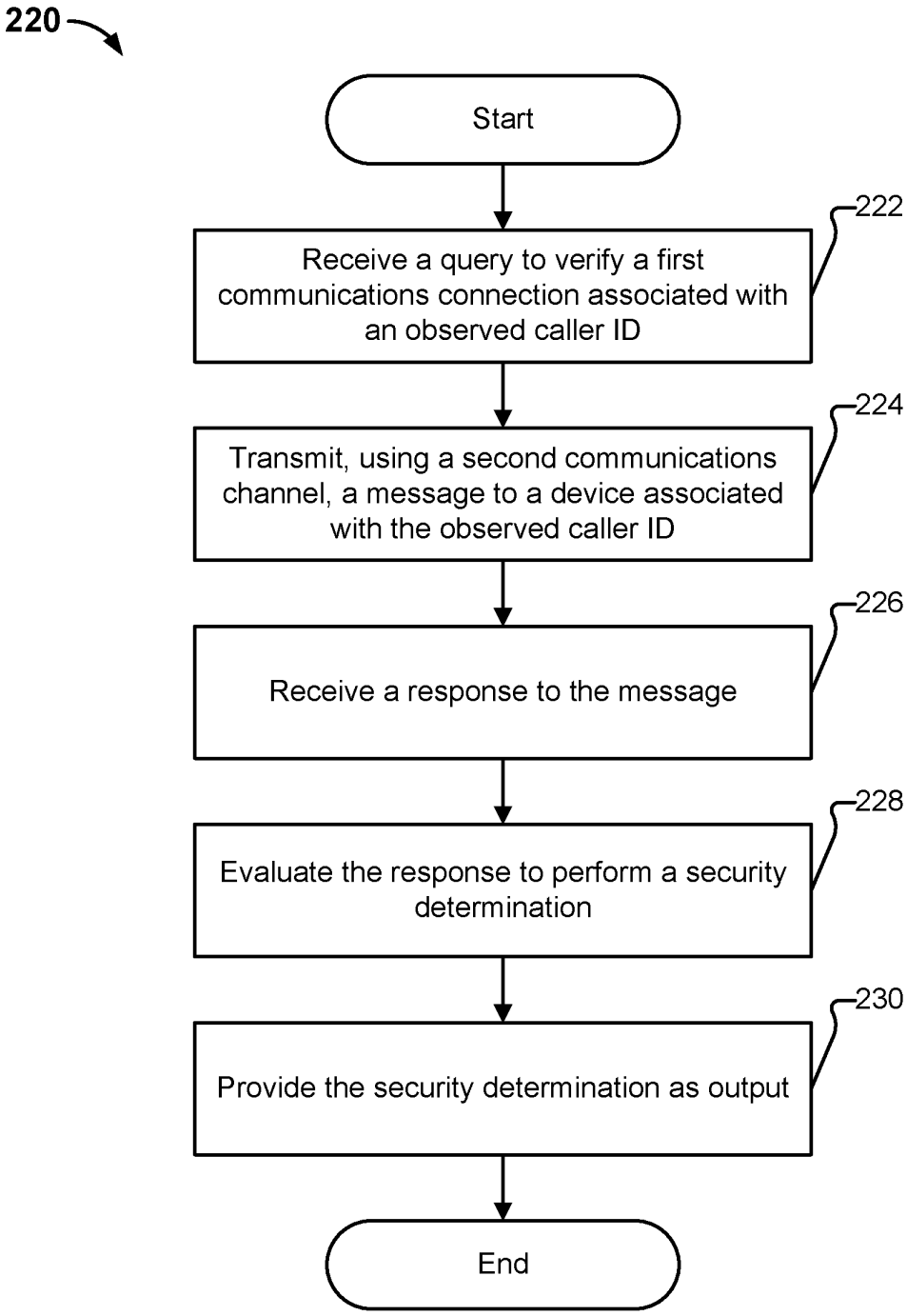
220
Start
222
Receive a query to verify a first communications connection associated with an observed caller ID
224
Transmit, using a second communications channel, a message to a device associated with the observed caller ID
226
Receive a response to the message
228
Evaluate the response to perform a security determination
230
Provide the security determination as output
End

FIG. 2B

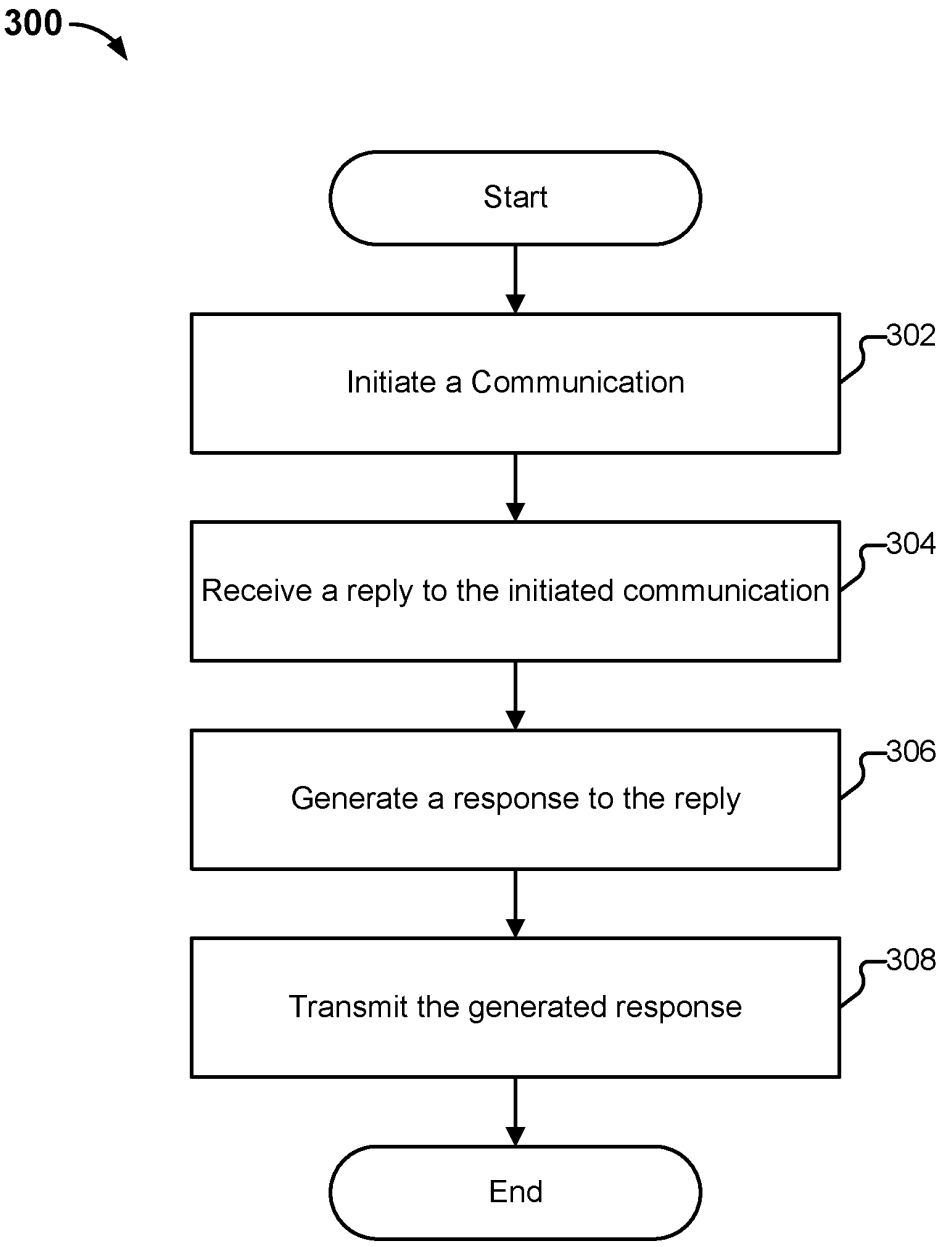
300
Start
Initiate a Communication
302
Receive a reply to the initiated communication
304
Generate a response to the reply
306
Transmit the generated response
308
End

FIG. 3A

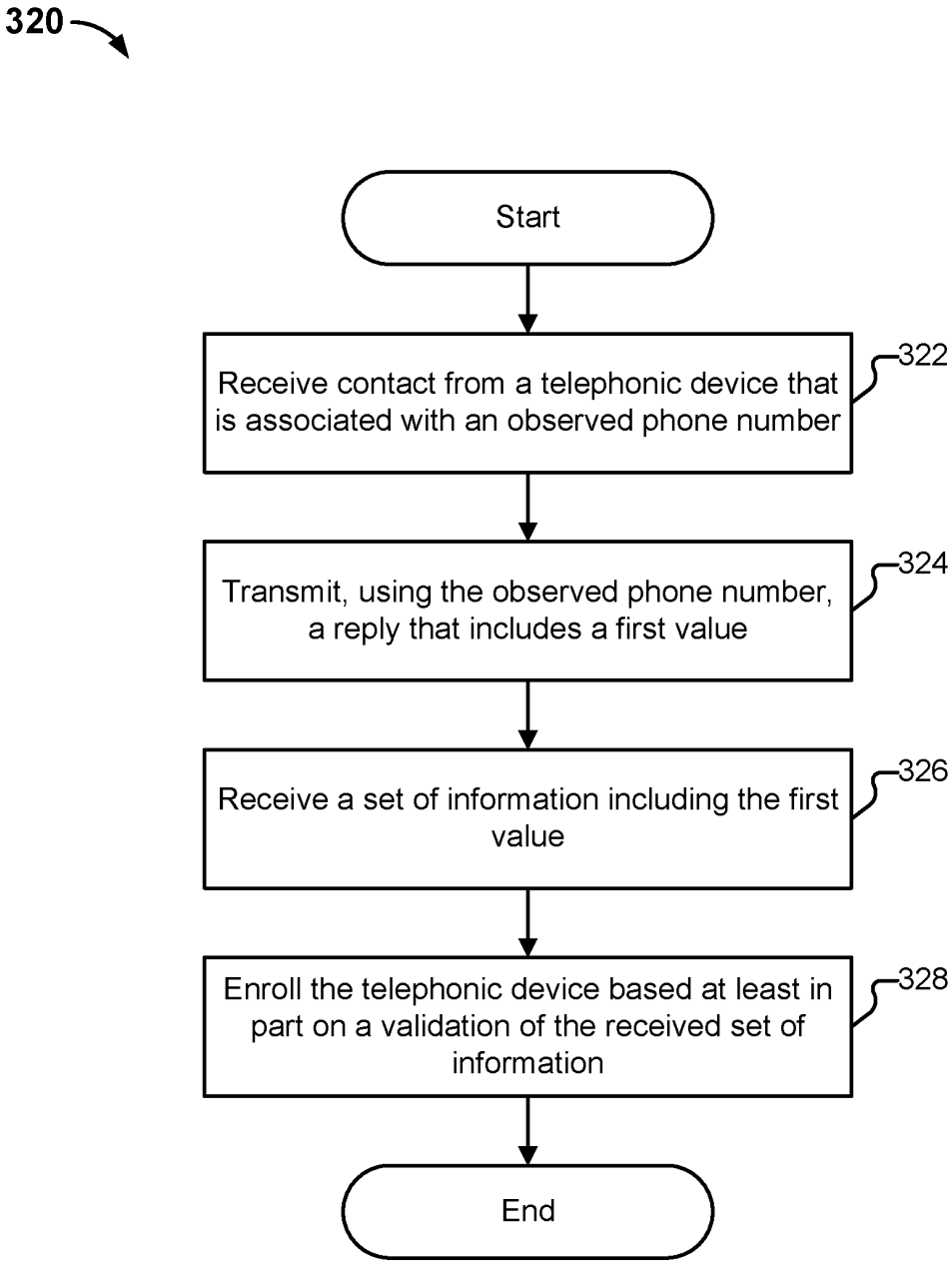
320
Start
Receive contact from a telephonic device that is associated with an observed phone number
322
Transmit, using the observed phone number, a reply that includes a first value
324
Receive a set of information including the first value
326
Enroll the telephonic device based at least in part on a validation of the received set of information
328
End

FIG. 3B

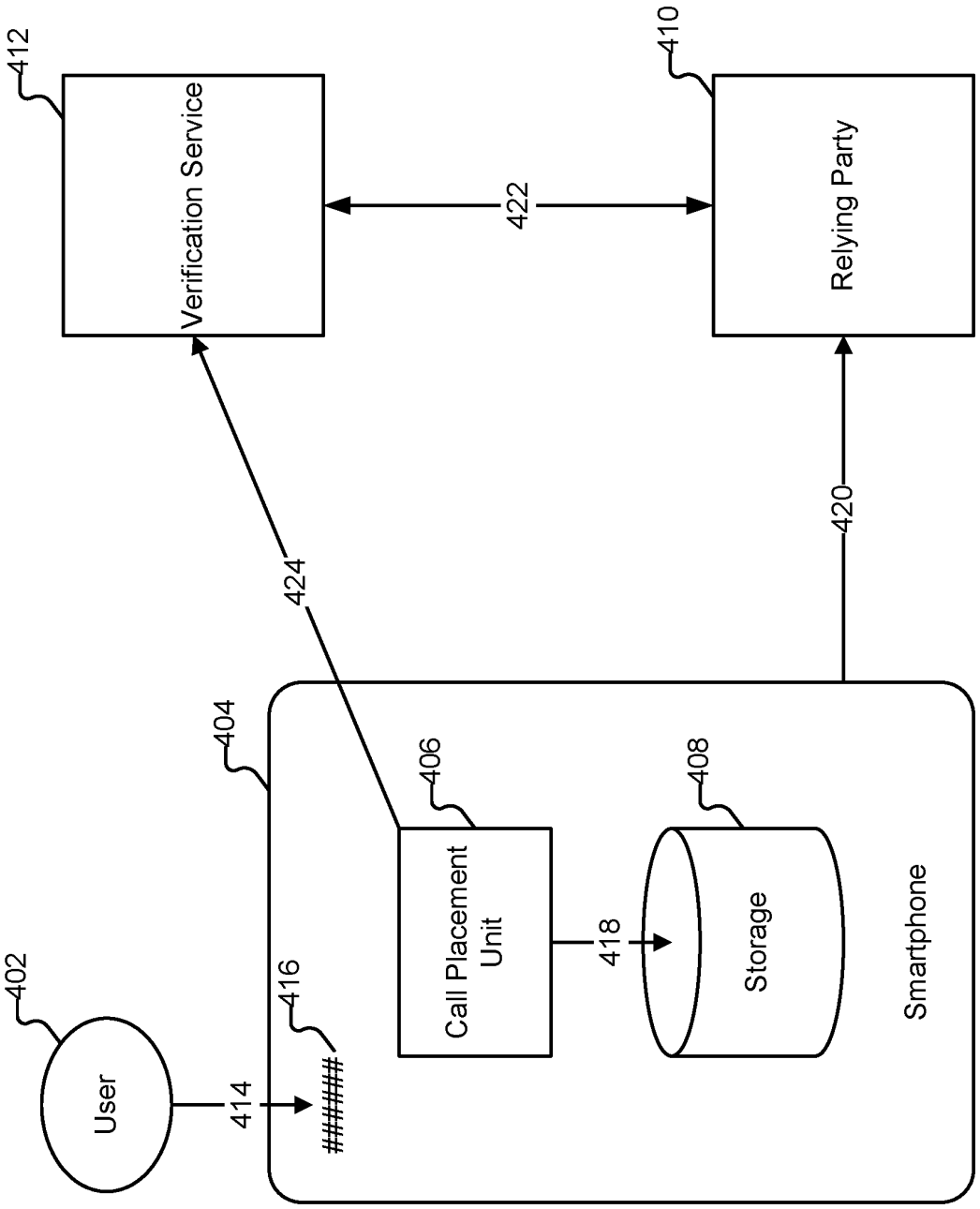
412
Verification Service
410
Relying Party
422
424
420
404
406
Call Placement Unit
408
Storage
418
Smartphone
402
User
414
416
#######

FIG. 4

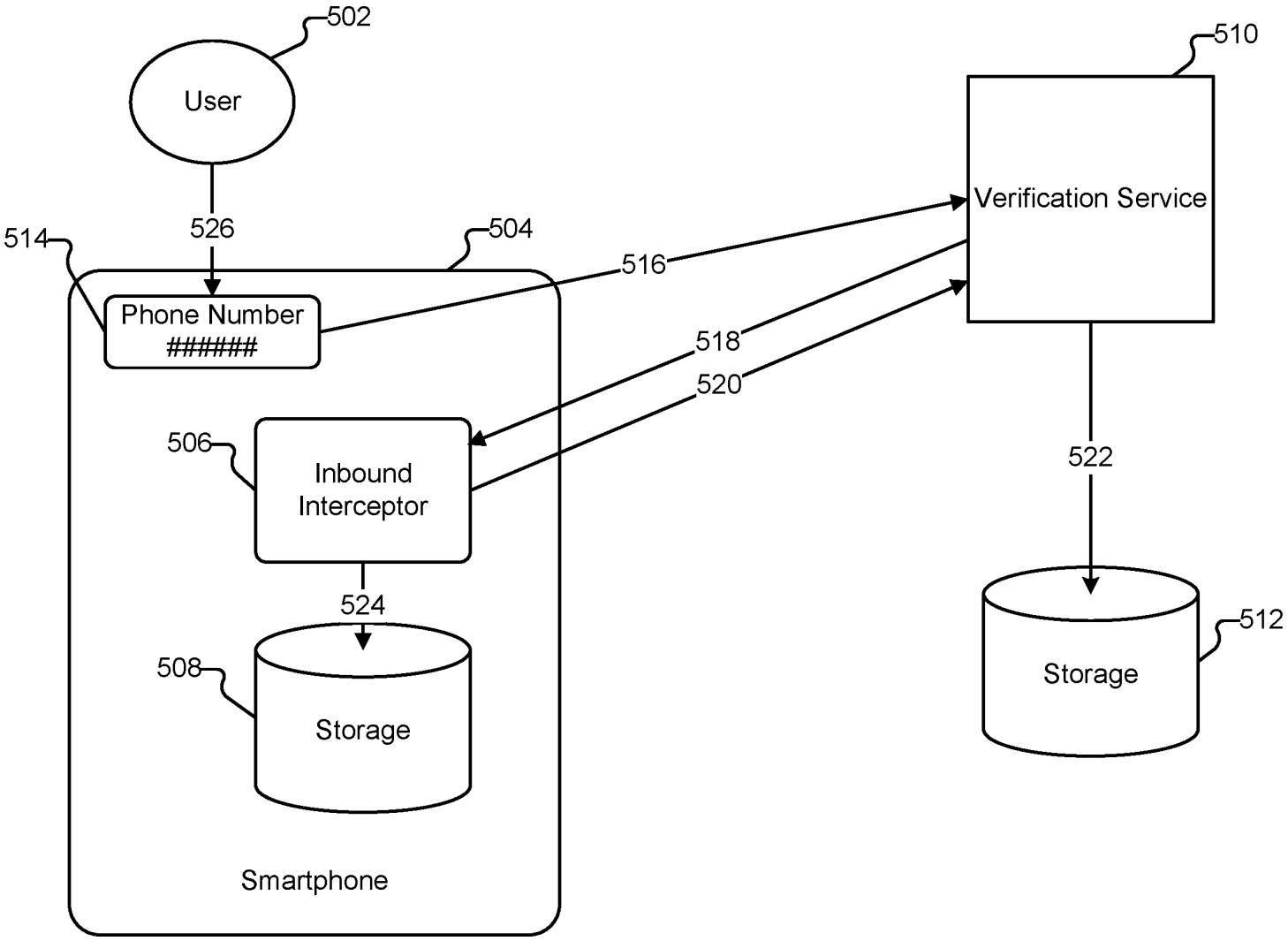

FIG. 5

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS,
AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0009

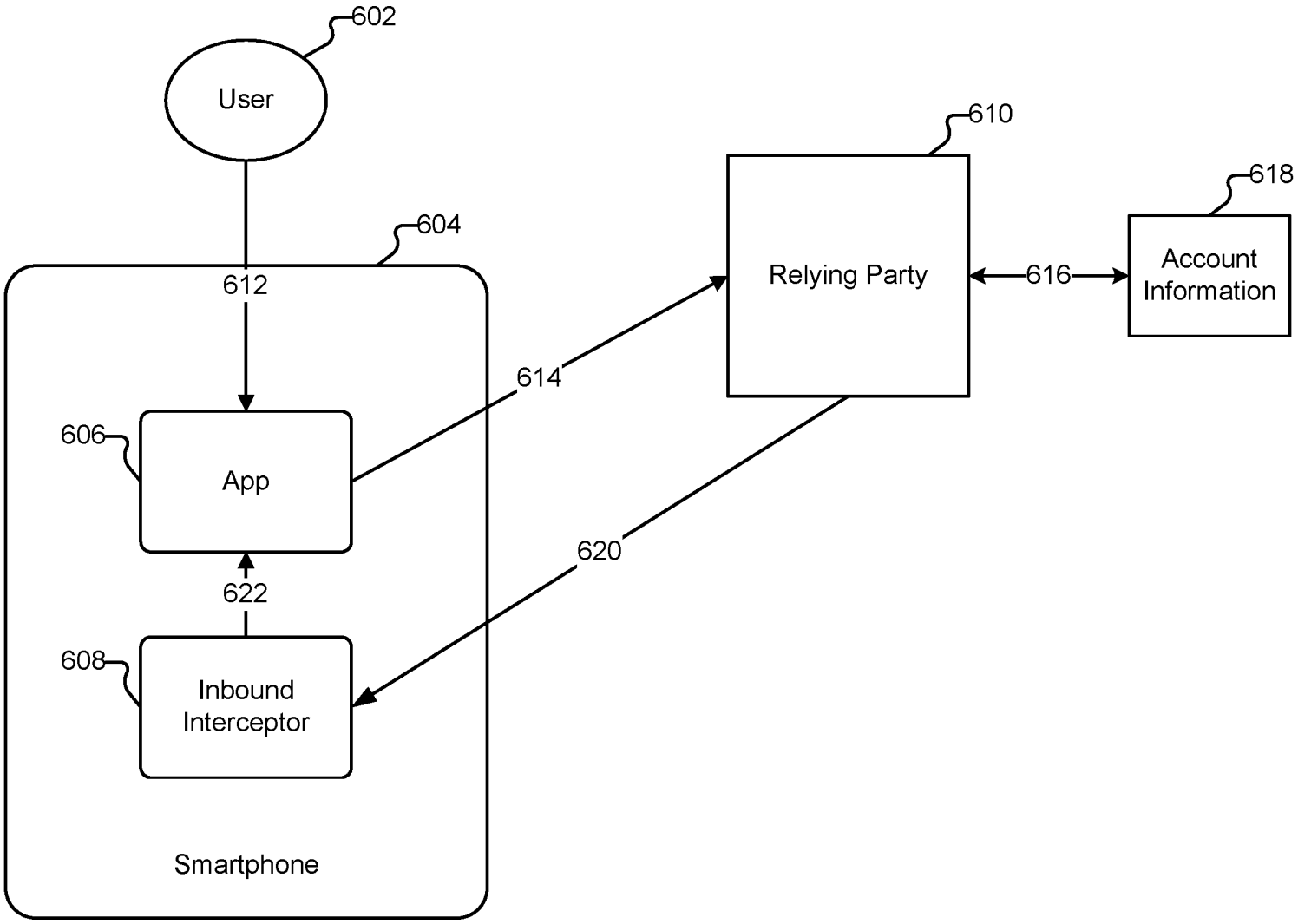

FIG. 6

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS,
AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0010

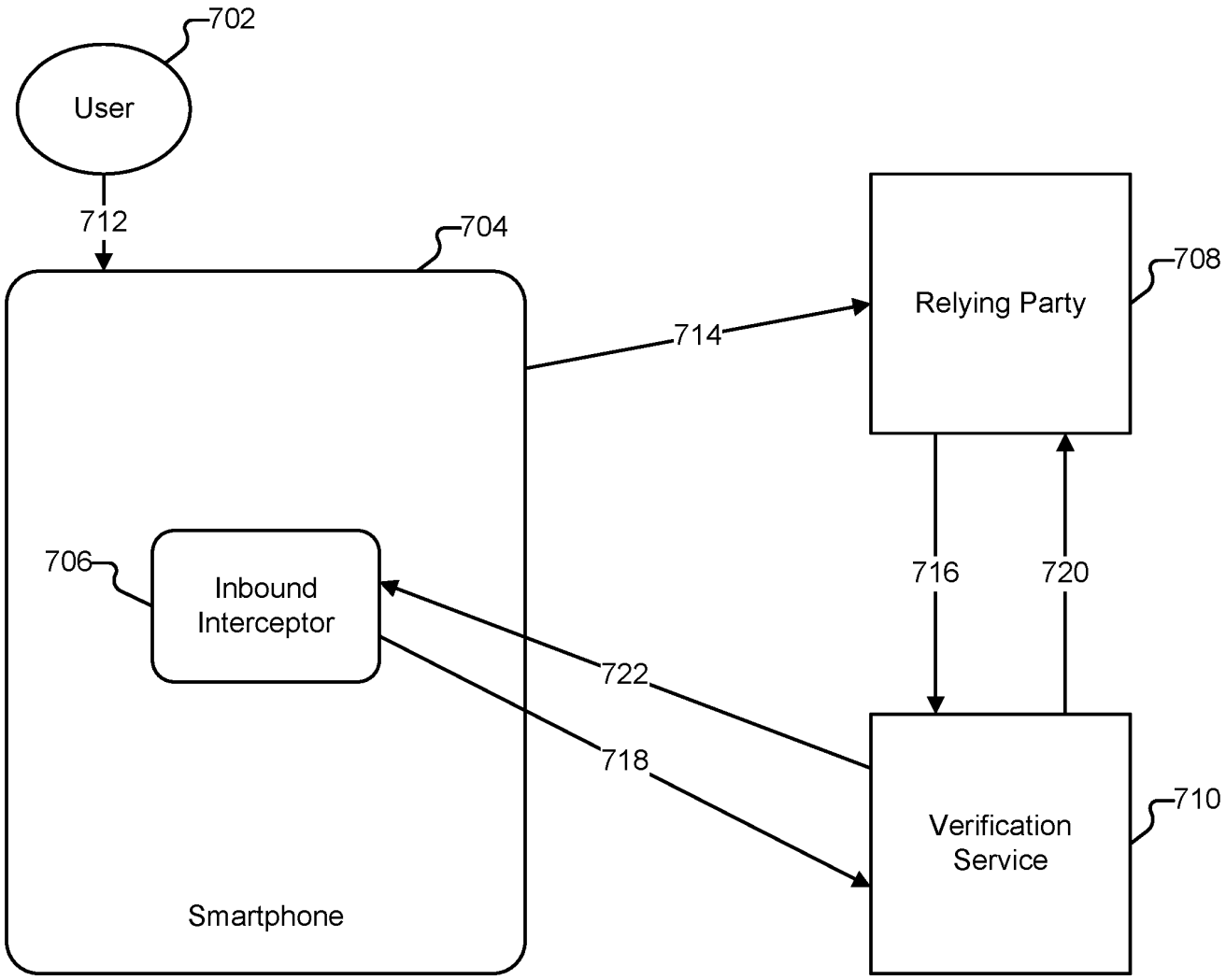

FIG. 7

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS,
AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0011

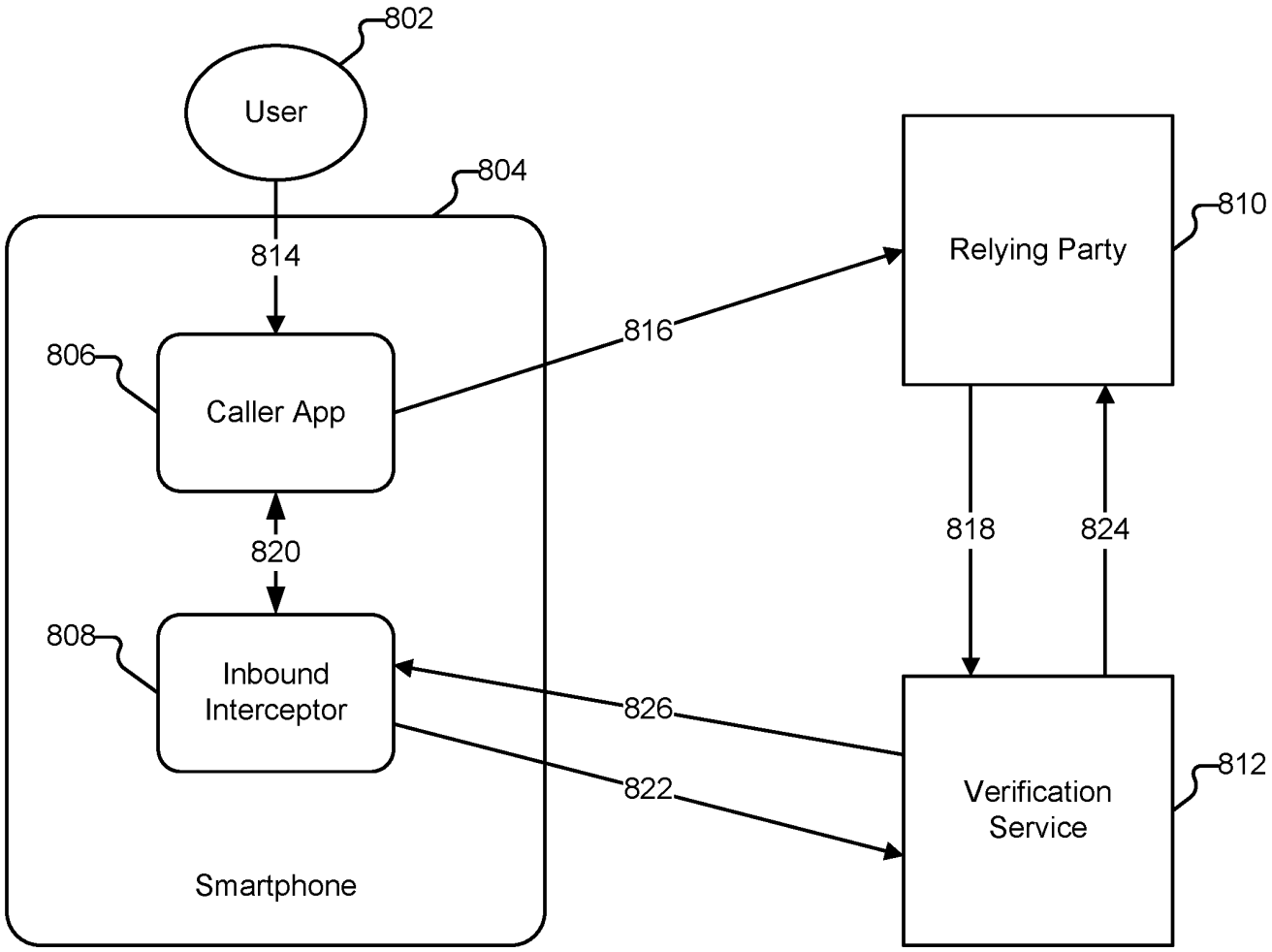

FIG. 8

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS,
AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0012

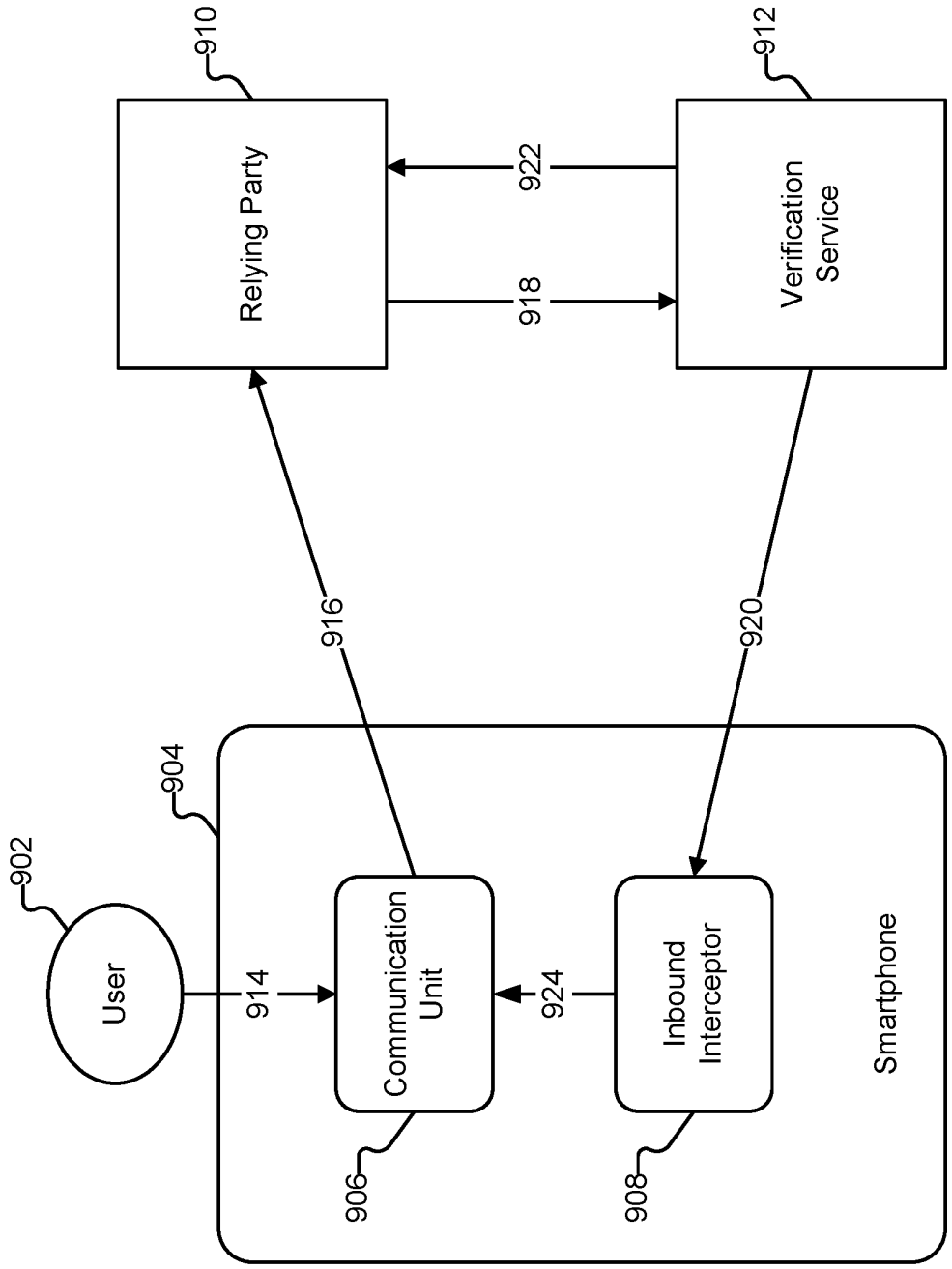
910
912
Relying Party
Verification Service
922
918
916
920
904
902
User
914
Communication Unit
924
Inbound Interceptor
Smartphone
906
908

FIG. 9

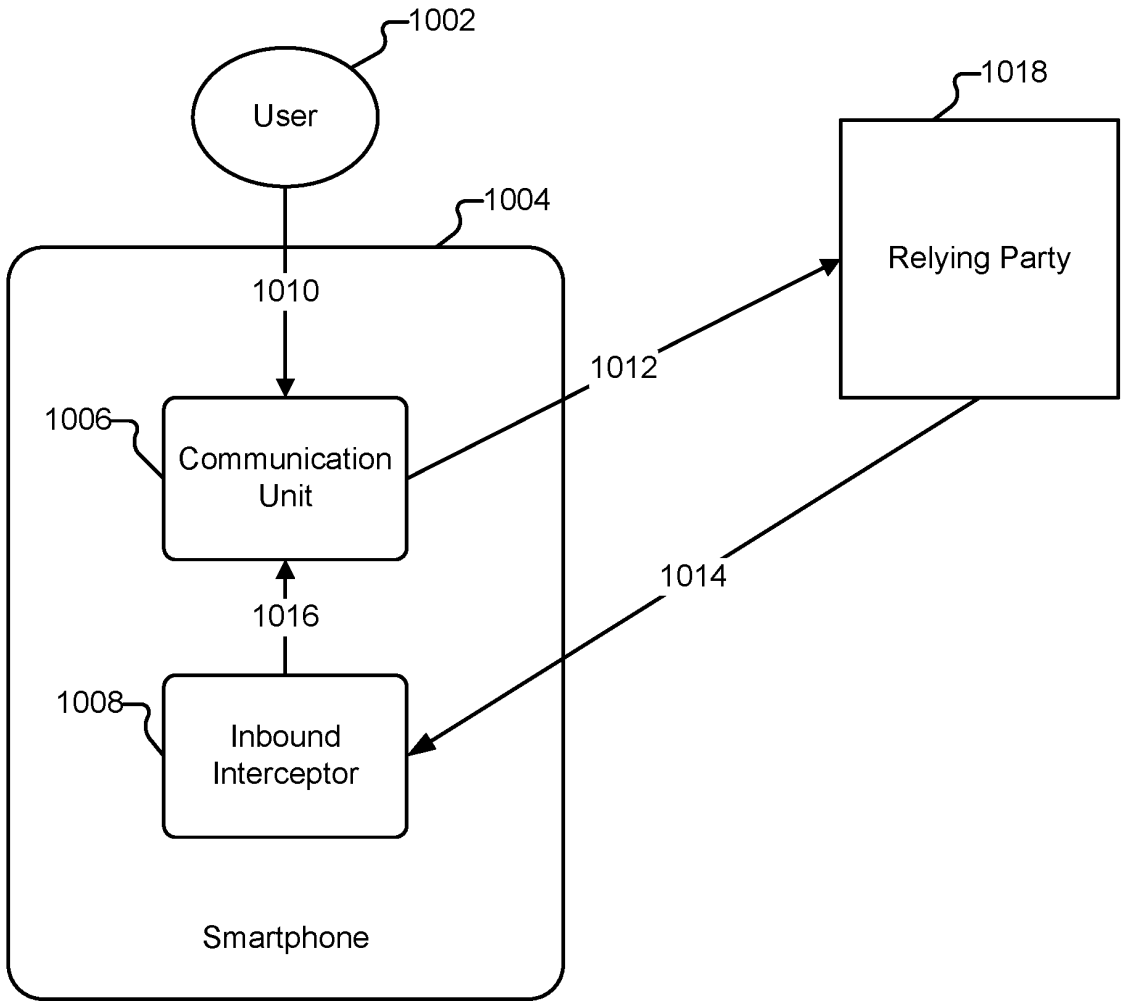

FIG. 10

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS,
AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0014

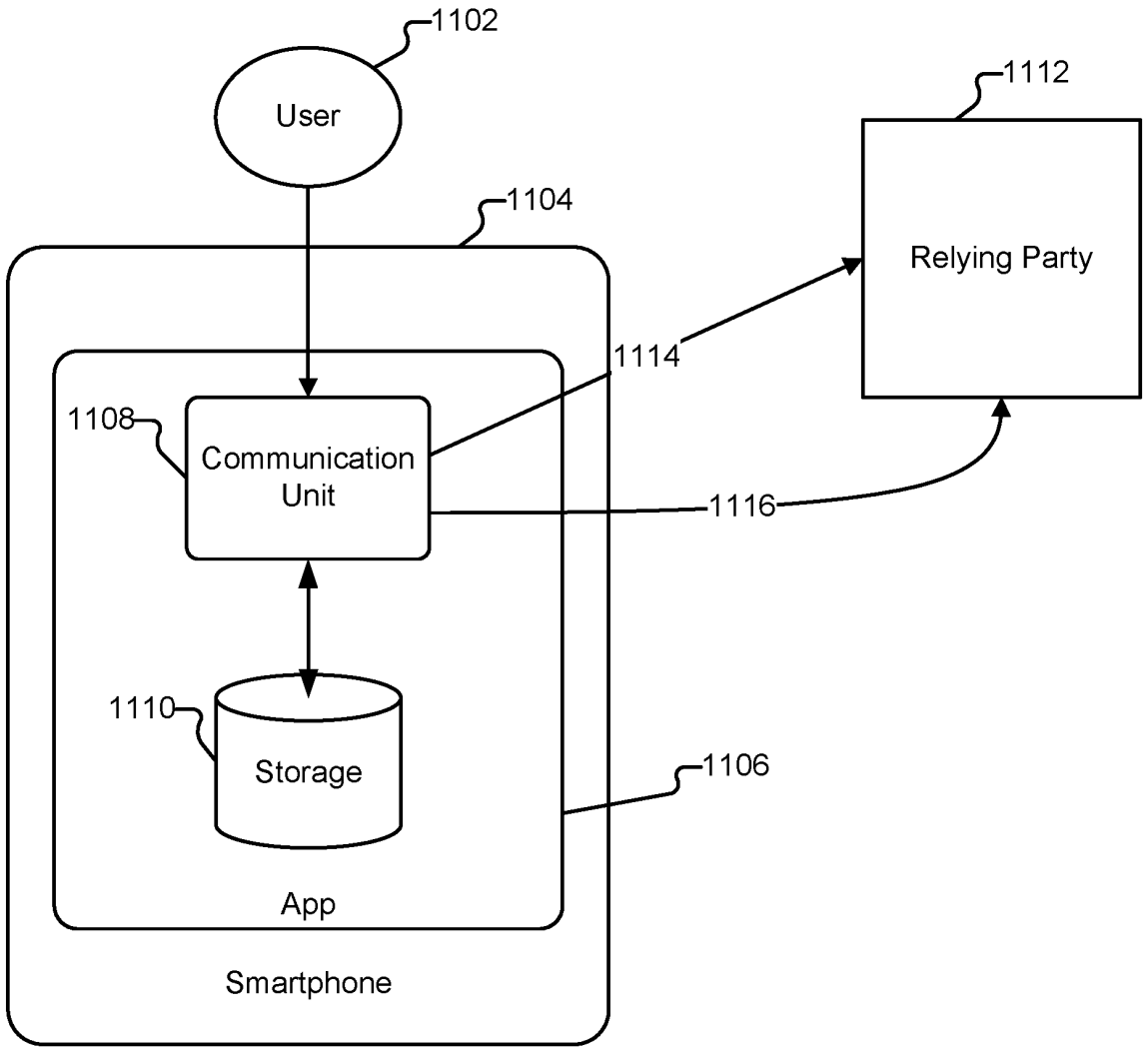

FIG. 11

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS,
AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0015

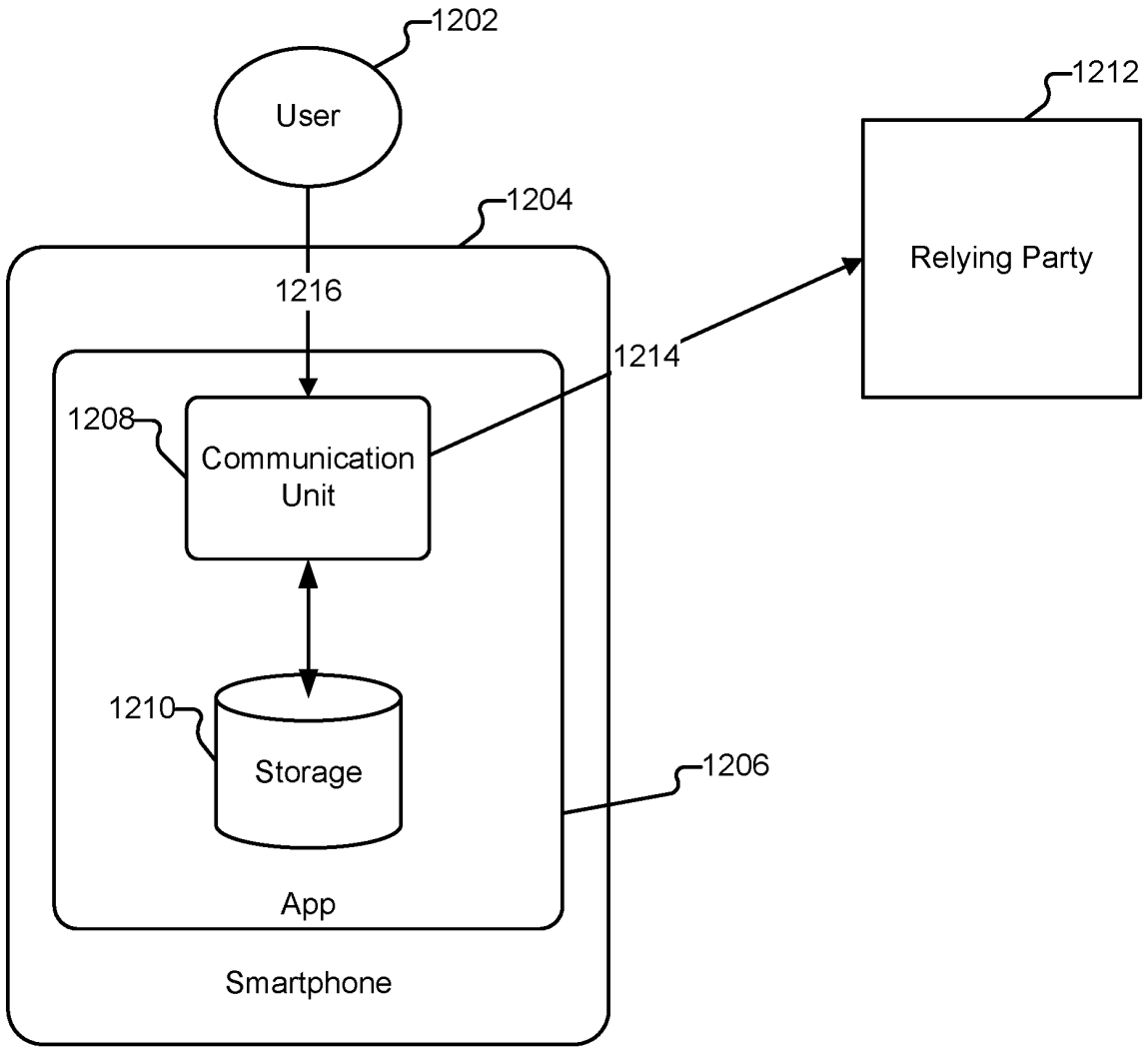

FIG. 12

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS, AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0016

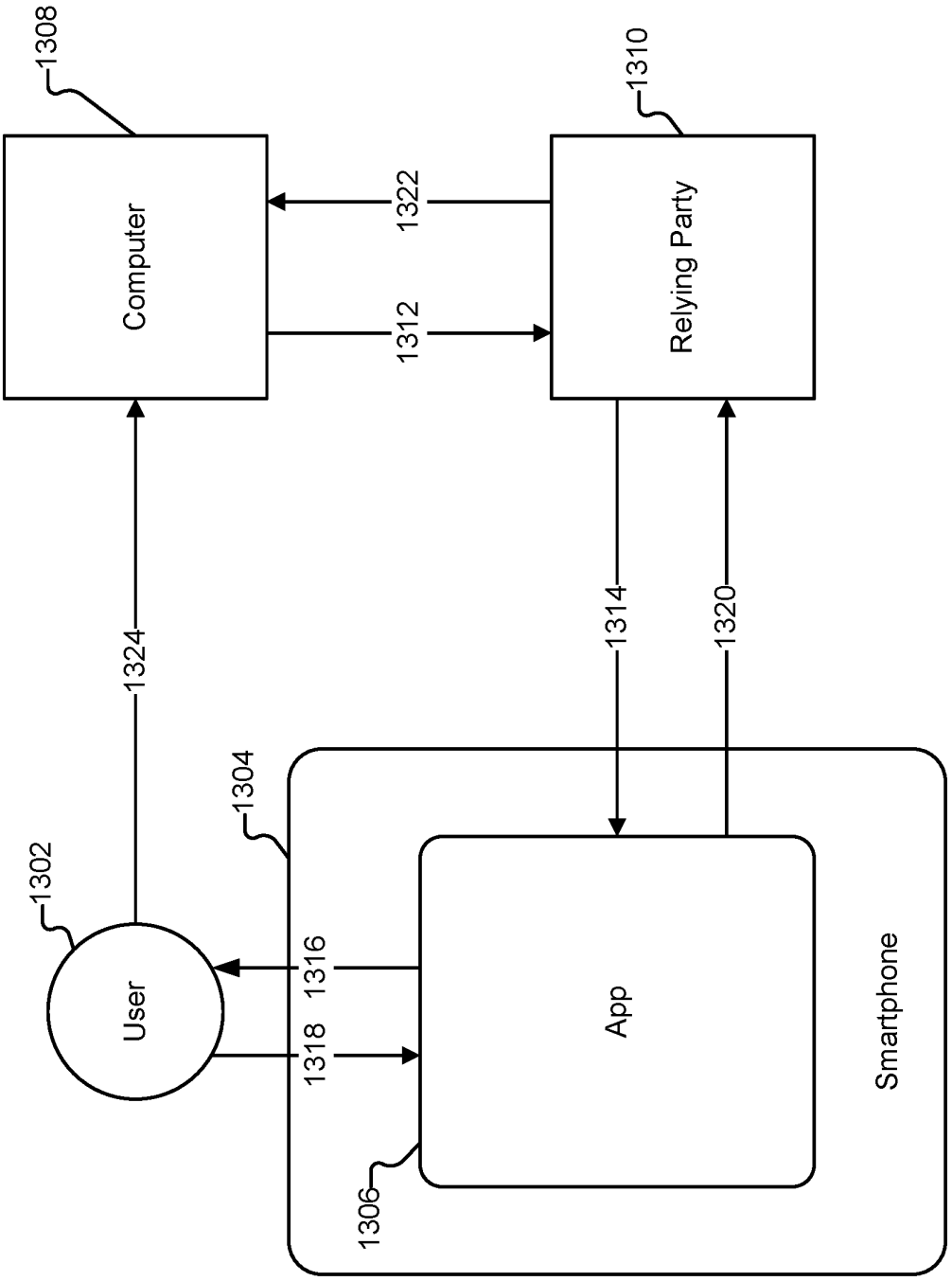
1308
Computer
1310
Relying Party
1322
1312
1324
1314
1320
1304
1302
User
1316
1318
App
Smartphone
1306

FIG. 13

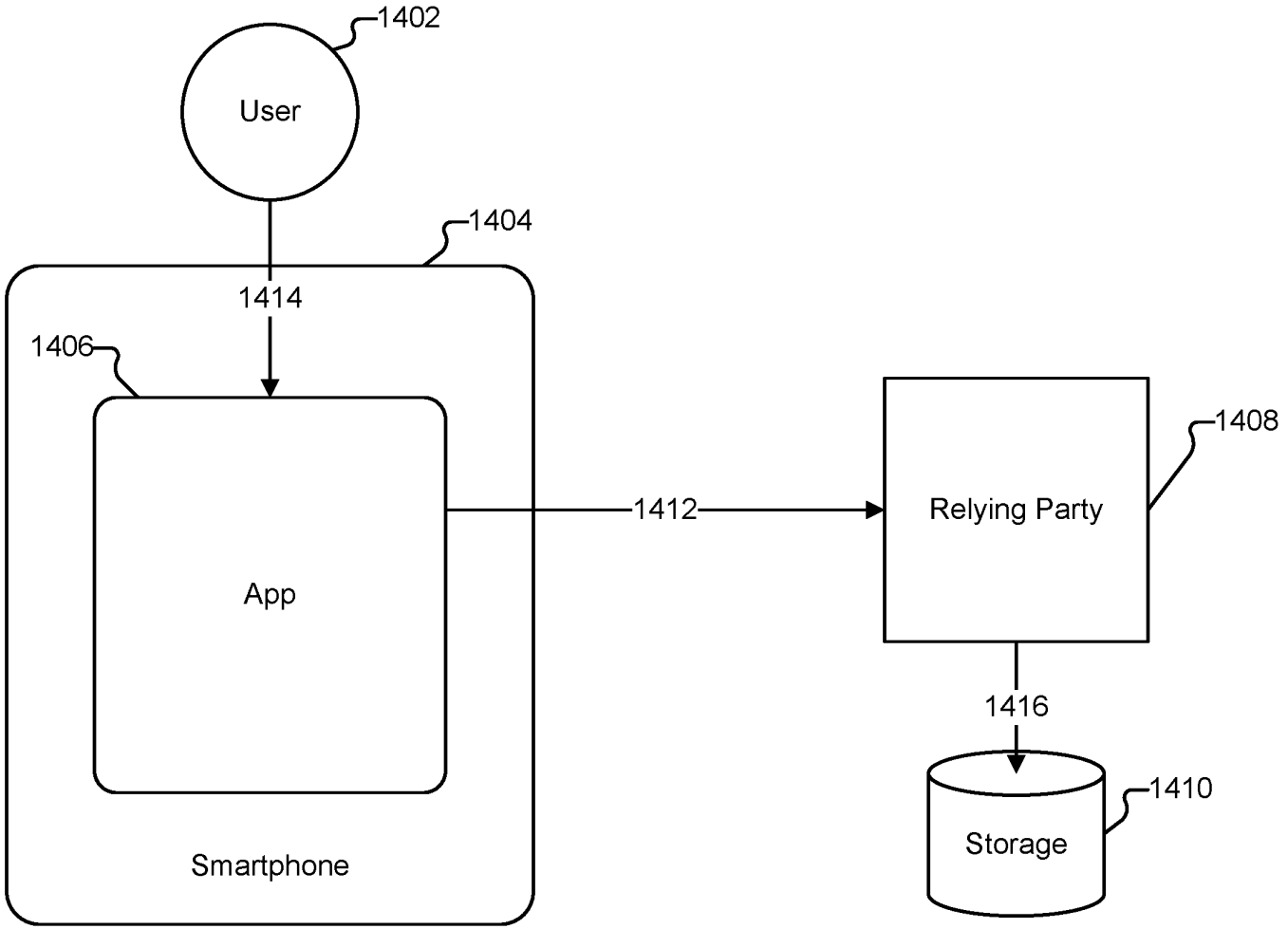

FIG. 14

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS,
AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0018

PTO/AIA/14 (11-15)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	MJAKP016C2
	Application Number	
Title of Invention	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 — Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Bjorn	Markus	Jakobsson	

Residence Information (Select One) ● US Residency Non US Residency Active US Military Service

City	Portola Valley	State/Province	CA	Country of Residence	US

Mailing Address of Inventor:

Address 1	118 Ramona Rd.
Address 2	

City	Portola Valley	State/Province	CA
Postal Code	94028	Country	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	21912		
Email Address		Add Email	Remove Email

Application Information:

Title of the Invention	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA		
Attorney Docket Number	MJAKP016C2	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	16	Suggested Figure for Publication (if any)	

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	MJAKP016C2
	Application Number	
Title of Invention	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☒ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	● Customer Number	US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	21912		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	16180373	2018-11-05

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	MJAKP016C2
	Application Number	
Title of Invention	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA	

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16180373	Continuation of	14535064	2014-11-06
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
14535064	Claims benefit of provisional	61901322	2013-11-07
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.			Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

			Remove
Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)
Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.			Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	MJAKP016C2
	Application Number	
Title of Invention	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA	

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	MJAKP016C2
	Application Number	
Title of Invention	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA	

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant 1 — Remove

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

● Assignee	Legal Representative under 35 U.S.C. 117	Joint Inventor
Person to whom the inventor is obligated to assign.	Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☒

Organization Name	RightQuestion, LLC		
Mailing Address Information For Applicant:			
Address 1	118 Ramona Rd.		
Address 2			
City	Portola Valley	**State/Province**	CA
Country	US	Postal Code	94028
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button. Add

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

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Approved for use through 04/30/2017. OMB 0651-0032
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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	MJAKP016C2
	Application Number	
Title of Invention	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA	

Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

Remove

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		**State/Province**	
Country i		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. Add

Signature:

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	MJAKP016C2
	Application Number	
Title of Invention	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA	

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ABSTRACT OF THE DISCLOSURE

Verifying caller identification information is described. A query to verify a first communications connection associated with an observed caller ID is received. Using a second communications channel, a message to a device associated with the observed caller ID is transmitted. A response to the message is received. The message is evaluated to perform a security determination. The security determination is provided as output.

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Attorney Docket No. MJAKP016C2

APPLICATION FOR UNITED STATES PATENT

VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA

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VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA

CROSS REFERENCE TO OTHER APPLICATIONS

[0001] This application is a continuation of co-pending U.S. Patent Application No. 16/180,373, entitled VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA filed November 05, 2018 which is incorporated herein by reference for all purposes, which is a continuation of co-pending U.S. Patent Application No. 14/535,064, entitled VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA filed November 06, 2014 which is incorporated herein by reference for all purposes, which claims priority to U.S. Provisional Application No. 61/901,322, entitled VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA filed November 07, 2013 which is incorporated herein by reference for all purposes.

BACKGROUND OF THE INVENTION

[0002] Determining the trustworthiness of information used to identify entities involved in communications such as text messages (e.g., SMS), email, calls, and instant messaging can be challenging. For example, information such as Automated Number Identification (ANI) information can be spoofed by unscrupulous entities, making it difficult for caller identity information to be trusted by customer support centers. As a result, organizations face high fraud risks, or employ resource-intensive measures in order to identify callers and senders of messages.

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BRIEF DESCRIPTION OF THE DRAWINGS

[0003] Various embodiments of the invention are disclosed in the following detailed description and the accompanying drawings.

[0004] Figure 1 illustrates an embodiment of an environment in which verification of caller identification information is performed.

[0005] Figure 2A illustrates an embodiment of a process for verifying caller identification information.

[0006] Figure 2B illustrates an embodiment of a process for verification of caller identification information.

[0007] Figure 3A illustrates an embodiment of a process for enrolling a device.

[0008] Figure 3B illustrates an embodiment of a process for enrolling a device.

[0009] Figure 4 illustrates an example of an environment in which verification of caller identification information is performed.

[0010] Figure 5 illustrates an example of an environment in which enrollment of a device is performed.

[0011] Figure 6 illustrates an example of an environment in which verification of caller identification information is performed.

[0012] Figure 7 illustrates an example of an environment in which verification of caller identification information is performed.

[0013] Figure 8 illustrates an example of an environment in which verification of caller identification information is performed.

[0014] Figure 9 illustrates an example of an environment in which verification of caller identification information is performed.

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[0015] Figure 10 illustrates an example of an environment in which verification of caller identification information is performed.

[0016] Figure 11 illustrates an example of an environment in which verification of caller identification information is performed.

[0017] Figure 12 illustrates an example of an environment in which verification of caller identification information is performed.

[0018] Figure 13 illustrates an example of an environment in which verification of caller identification information is performed.

[0019] Figure 14 illustrates an example of an environment in which verification of caller identification information is performed.

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DETAILED DESCRIPTION

[0020] The invention can be implemented in numerous ways, including as a process; an apparatus; a system; a composition of matter; a computer program product embodied on a computer readable storage medium; and/or a processor, such as a processor configured to execute instructions stored on and/or provided by a memory coupled to the processor. In this specification, these implementations, or any other form that the invention may take, may be referred to as techniques. In general, the order of the steps of disclosed processes may be altered within the scope of the invention. Unless stated otherwise, a component such as a processor or a memory described as being configured to perform a task may be implemented as a general component that is temporarily configured to perform the task at a given time or a specific component that is manufactured to perform the task. As used herein, the term 'processor' refers to one or more devices, circuits, and/or processing cores configured to process data, such as computer program instructions.

[0021] A detailed description of one or more embodiments of the invention is provided below along with accompanying figures that illustrate the principles of the invention. The invention is described in connection with such embodiments, but the invention is not limited to any embodiment. The scope of the invention is limited only by the claims and the invention encompasses numerous alternatives, modifications and equivalents. Numerous specific details are set forth in the following description in order to provide a thorough understanding of the invention. These details are provided for the purpose of example and the invention may be practiced according to the claims without some or all of these specific details. For the purpose of clarity, technical material that is known in the technical fields related to the invention has not been described in detail so that the invention is not unnecessarily obscured.

[0022] Described herein are techniques for ascertaining the identity of a device initiating a communication. Using the techniques described herein, potential attempts at spoofing of caller ID or automatic number identification (ANI) data (or any other type of caller identification) can be detected. As will be described in more detail below, example techniques disclosed herein include a client-side (e.g., end-user phone-side) agent that sends confirmation information to verification entities as a result of detecting outgoing communication or being prompted to

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validate communication session information. The transmitted information is validated by a verifying entity using information relating to the session and to the client device, and a security determination is made. Based on the security determination, a relying party, such as a callee or a vendor associated with the callee, makes a policy-based decision to determine the most favorable action, for example, using a risk based assessment.

[0023] ENVIRONMENT

[0024] Figure 1 illustrates an embodiment of an environment in which verification of caller identification information is performed. In the example shown, client device 102 is a device with telephonic capabilities that is used, by a user, to contact callee 118 (e.g., a bank). When contacting callee 118, automatic number identification (ANI) data, such as caller id, for the calling device 102 is presented to the callee. In this example, verification service provider 120 is requested by the callee to verify the automatic number identification data of device 102, for example, to make a security determination as to whether the ANI data is being spoofed.

[0025] Device 102 includes a call placement unit 108 that is used to initiate, at 124, a phone call or an SMS over network 122 to callee 118. Call placement unit 108 is configured to store, at 126, call data in call data unit 110.

[0026] In response to being contacted by device 102, callee 118 sends a request (128) for verification of the call (e.g., verification of ANI data indicated by the call) to verification service provider 120. Verification service provider 120 is configured to determine whether callee 118 is permitted to make this request. In this example, verification service provider 120 determines that callee 118 is permitted to make the request for verification, and in response, verification service provider 120 transmits a request 130 to telephonic device 102.

[0027] The request 130 made by the verification service provider to device 102 is received by communication unit 104 of device 102. In the example shown, an associated request is sent at 132 to process unit 106, which is configured to determine whether verification service provider 120 is permitted to make request 130. In this example, it is determined whether the verification service provider is permitted to make request 130 by using a rule obtained, at 134, from rule unit 112. If verification service provider 120 is determined to be permitted to make the

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request 130 to device 102, then process unit 106 obtains, at 136, call data related to the associated call 138. Process unit 106 can also optionally retrieve at 140 a secret key from storage 114.

[0028] In the example shown, process unit 106 interacts at 119 with message generation unit 116, which is configured to generate a message that is sent at 144 to communication unit 104, and then sent at 146 to verification service provider 120.

[0029] In this example, verification service provider 120 is configured to evaluate the message received from device 102. Based on the evaluation, the verification service provider is configured to make a security determination, which is then communicated, at 148, to callee 118, or any other appropriate entity associated with callee 118. Based on the security determination received from the verification service provider at 148, callee 118 makes a security decision.

[0030] In various embodiments, the calling device, callee, and verification service provider communicate with each other over one or more communications channels (represented herein as a single network cloud 122), such as a telephonic network, cellular network, cellular data network (e.g., 3G/4G), the Internet, Wi-Fi, Bluetooth, audio, SMS, phone call, RDMA, interprocess communication within the same system, or any other appropriate communication channel/network.

[0031] In the example shown, verification service provider 120 includes interface 150, processing unit 152, and database 154. In some embodiments, interface 150 is used to communicate information (e.g., over network 122) with various entities, such as callee 118 and telephonic device 102. For example, the communications can include transmitting requests for verification, receiving responses to verification messages, or any other appropriate communications via the interface. In some embodiments, processing unit 152 is configured to perform verification processing. For example, verification processing can include generating messages, processing responses, performing security determinations, etc. In some embodiments, database 154 is a data store configured to store information associated with performing verification. For example, as will be described in more detail below, in some embodiments, the verification service provider uses the data store to store such information as user records, device records, enrollment information, or any other appropriate information.

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[0032] Verification service provider 120 is illustrated as a single logical device in Figure 1. In some embodiments, verification service provider 120 comprises standard commercially available server hardware (e.g., a multi-core processor, 4+ Gigabytes of RAM, and one or more Gigabit network interface adapters) and runs typical server-class operating systems (e.g., Linux), and also runs Apache HTTP Server software. Verification service provider 120 can also be implemented using a scalable, elastic architecture and may comprise several distributed components, including components provided by one or more third parties. Further, when verification service provider 120 is referred to herein as performing a task, such as storing data or processing data, it is to be understood that a sub-component or multiple sub-components of verification service provider 120 (whether individually or in cooperation with third party components) may cooperate to perform that task.

[0033] In some embodiments, the callee incorporates at least some of the features described herein as being provided by verification service provider 120, and a separate verification service provider 120 (or at least a portion thereof) is omitted, as applicable.

[0034] VALIDATING CALLER IDENTIFICATION INFORMATION

[0035] Described below are further details regarding validation of caller ID or ANI data.

[0036] In the above example of Figure 1, performing validation of caller ID or ANI data includes a verification service provider sending a message to the phone number that is observed from the caller ID or ANI data. In some embodiments, a backchannel is used for communication of a message between a verification service provider and a phone or other end-user device. The verification service provider is prompted to initiate communication with the phone at the request of the callee entity contacted by the phone (e.g., a service provider such as a bank or other entity) that the user of the phone is calling using the phone. In response to the request by the callee (also referred to herein as a "relying party" that relies on the verification services of the verification service provider), the verification service provider then transmits the message. In some embodiments, the message includes a component that is difficult (if not impossible) to predict by a potential attacker, such as a serial number, a counter, a pseudo-random or random number, a number specific to the session or the phone, or any other appropriate component value. In various embodiments, the back channel uses one or more communication technologies,

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such as an Internet data channel, a proprietary network with a WiFi or Bluetooth endpoint communicating with the phone, short message service (SMS), or any other appropriate back channel. A component on the phone is configured to intercept or receive the message and initiate a response to the verification service provider, the callee, or a party associated with one of these entities. In some embodiments, the response makes reference to at least one part of the message. Further, in some embodiments, the message contains indications dictating the manner of responding, including to what entity, what communication channel, and what the formatting of the response should be. The verification service provider transmits at least one message over at least one communication channel to the phone as a result of the request from the service provider. In one embodiment, multiple effectively simultaneous messages are transmitted, for example, using a data channel over the Internet as well as using SMS.

[0037] In some embodiments, the message is different for different channels. For example, the messages sent over the different channels can have different non-predictable components. The verification service provider stores a state associated with each session, where this state is associated with the messages that are generated and sent. This allows later verification of the responses. In other embodiments, the verification service provider stores a secret value that allows verification of responses without having to access a session-specific state. Depending on the connectivity of the phone at the time of the transmission of the message, one of the messages may arrive before another. The different messages may correspond to different modes of creating the response, which, in some embodiments, is either indicated as part of the message or is implicitly conveyed to the phone. In one example embodiment, a message that is received using one channel, such as SMS, is always responded to using the same channel, since there is evidence that this channel is available. Alternatively, in other embodiments, the phone generates multiple responses utilizing different communication channels, using each one of these channels to transmit a response, where each such response corresponds to the message. In one embodiment, the response on the second channel will contain information about the call on the first channel, including one or more of the phone number, call start time, and call end time.

[0038] In one embodiment, the verification service provider is the recipient of the response. As the response is received, it is verified whether the response corresponds to the

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message. If it is verified that the response corresponds to the message, then a positive security determination is made. If an invalid response is received, or no response at all is received within some threshold amount of time, then a negative security determination is made. The verification service provider generates a variety of different positive security determinations based at least in part on the channels used for transmitting the message from the verification service provider to the phone. If SMS is used, for example, then the generation and transmission of an associated response is evidence of the phone having received the message, which in turn is evidence of the phone being associated with the phone number used for the transmission of the SMS. In some embodiments, the verification service provider also generates a variety of positive security determinations based on a state associated with the phone that is used to generate the response. For example, if the process running on the phone that generates the response uses a number that is effectively unique to the phone and stored in memory accessible by the phone, in order to create the response, then the response is an indication of the message having reached the phone and the response being generated by the phone. In some embodiments, the effectively unique number is also stored by the recipient of the response or a unit associated with the recipient, and is used to validate the response to verify that it corresponds to at least one of the message and the state associated with the phone.

[0039] In one embodiment, portions of the verification process are performed as part of an application (also referred to herein as an "app") that is installed on an end-user phone device. In some embodiments, the app receives notifications from the operating system of the phone when a message is received, for example, by subscribing to SMS events. In some embodiments, the processing performed by the app includes removing the message (e.g., received from the verification service provider) so that the message is not seen by the end-user, for example, in order to improve the user experience. For example, in the event that SMS is used, the SMS message can be removed such that the message is not presented, for example, automatically, by an operating system of the phone. In some embodiments, suppressing the communication of the message by the telephonic device to the user can also be beneficial if the channel that is used to communicate the message is a regular phone call from a number associated with the verification service provider, in order for that phone call to not be noticeable by the end user of the telephone device. In various embodiments, the portion of the verification processing performed on the

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device is associated with a software, firmware or hardware component associated with the phone, and is able to access incoming messages.

[0040] In some embodiments, the message includes conveyance of information associated with receiving a phone call, for example, where the phone call does not have to be conveyed to the user in any manner, and where the message is implicit in the information associated with the call. For example, the verification service provider can place a call or SMS to the phone from a number associated with the verification process. When the phone is notified of this phone call, it suppresses the conveyance of it to the end user. In some embodiments the phone call is terminated as soon as the device has observed the caller id information, without receiving the call. This can also lower the costs of operating the service. In this example, the message is the fact that the number associated with verification was observed, or a number out of a collection of available numbers associated with the verification service provider was used. In other embodiments, a message is implicitly communicated over a communication channel by the selection of a phone number used to place a call, or the forging of caller id information to convey a message.

[0041] In another embodiment, the backchannel is not a separate channel, but is encoded in the primary communication channel. In some embodiments, the encoding of the backchannel in the primary communication channel is performed in a manner that does not degrade the quality of the session in a noticeable manner. For example, suppose that a verification server entity is a component of the callee entity or uses the callee as a proxy for the backchannel communication. The verification server entity creates a signal that encodes a request that is sent to the calling device using the first communication channel. This signal is created in a manner such that it is unlikely to be noticeable to the human caller, but is detectable by an agent residing on the caller phone. The agent on the phone extracts the signal and decodes it, after which the agent generates a response message. The response message is sent to the verifying service, either using a separate communication channel or using the first communication channel. In the latter case, the message is again encoded and transmitted in a manner that is unlikely to be noticeable to human users, but which is extracted and decoded by a corresponding agent associated with the caller. Examples of techniques for creating signals in a manner such that they are not noticeable include techniques used within the field of steganography, as applied to

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the audio signal; and to use short bursts of signals in frequency bands that do not interfere with a communication, such as static signals that will be barely audible. The decoded signal is then evaluated as described above. In some embodiments, the request and the message in response to the request are both communicated in a manner that would be audible under normal circumstances, but which is suppressed from the end user, and removed from the received signal after it has been extracted.

[0042] In one embodiment, portions of the above-mentioned verification process are performed as part of an application (also referred to herein as an "app") that is downloaded by an end user and installed on the end-user device (e.g., smartphone, tablet, etc.). For example, the app can be an app that is specifically intended to address the caller id validation, and which may do this for one or more relying parties that would like to know that the caller id information they obtain when receiving a phone call is valid. As another example, portions of the above-mentioned verification process may be part of an app that has another primary purpose, such as a bank app that allows users to access their bank account from their handset. In this case, the process for validating caller id may interact with only the bank associated with the app, or with a collection of entities that are approved by the bank or a party producing the app. In another embodiment, the verification processing performed by the device is pre-installed on the device by a chip manufacturer, such as the original equipment manufacturer (OEM), or a carrier associated with the device. For example, the verification processing configured to be performed by the device may be part of the operating system routines or apps that are preloaded on the device at the time of purchase.

[0043] In one embodiment, data stored along with the process indicates what phone number(s) are associated with the verification service provider. In various embodiments, this data is stored on the device at the time of installation, at the time of configuration, or as the process is first used. In some embodiments, data stored along with the verification process contains certificates used to verify such phone numbers. In other embodiments, instructions are used to validate updates of such data, whether received as part of patches or associated with communication with the verification service provider (or an entity associated with the service provider). In some embodiments, verification data and verification instructions are used to verify numbers associated with the verification service provider, which may be a distributed

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service run by one or more independent organizations. In other embodiments, instead of associating one or more phone numbers with the verification service provider, other information is associated with the verification service provider, such as one or more public keys, one or more secret keys, one or more IP addresses, one or more elements of device information, one or more instant message addresses, or any other appropriate information. In some embodiments, this information is secured and/or verified in a manner similar to how information related to phone numbers is secured and/or verified.

[0044] As the second communications connection is established between a verification service provider and a potential calling device, the device determines whether the connection is associated with a phone number associated with the verification service provider, for example, using automatic number identification techniques and performing a comparison to a list (e.g., whitelist) of phone numbers or using an execution of a rule. If a match is determined, then the above-described verification process optionally suppresses the conveyance to the device end user of the second communications connection and associated data. Additionally, in some embodiments, if a match is determined, then a message is computed based on at least one of the ANI information associated with the second communications connection, data associated with the initiator of the second communications connection, data communicated using the second communications connection, and data associated with the communication (e.g., channel data, start time of the communication, a value stored in a memory associated with the device, etc.). In some embodiments, a connection is established to a phone number associated with the verification service provider and the message is communicated over the established connection. In other embodiments, a phone number or an address is computed or selected based on at least one of the ANI information associated with the second communications connection, data associated with the initiator of the second communications connection, data communicated using the second communications connection, and a value stored in a memory associated with the first device. A message associated with the second communications connection is then transmitted to the computed or selected destination. In another embodiment, the message is communicated over the first communications connection (primary communication channel used to contact a callee), where the message is computed based on at least one of the ANI information associated with the second communications connection, data associated with the initiator of the second

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communications connection, data communicated using the second communications connection, and a value stored in a memory that was previously associated with the device.

[0045] In some embodiments, where multiple communication channels are available for the telephonic device to send a response, the phone can dynamically select between available options. In various embodiments, the channel selection is based on a variety of factors including cost, availability, reliability, and latency.

[0046] In some embodiments, the verification processing resident on the device determines that a phone call is placed, generates a message based on a value stored in a memory associated with the device, and transmits the generated message to a verification service provider at the time that the phone call is made. In some embodiments, the determination is performed, for example, by subscribing to relevant events, or by modifying the interrupt or event handlers, the phone number selection, the phone number entry, the operating system, or one or more drivers. In some embodiments, the message includes a timestamp of the call, such that the message cannot be replayed later. In some embodiments, the message includes or is associated with the number to which the phone call is placed. One example implementation is for the message to be a message authentication code on the phone number called, where the message authentication code is at least one of a counter value and an additional value that may be pseudo-randomly generated, for example, using a key that is stored on the device and also stored in a memory associated with the verification service provider (where the key is associated with the device in the memory associated with the verification service provider). The generated message is then communicated over a communication channel to the verification service provider.

[0047] As described above, in some embodiments, the message sent to the verification service includes a timestamp, which can be used to prevent a replay attack. For example, the timestamp can be used by the verification service to score the validity of the communication, where an old or aged timestamp may be indicative of an attack.

[0048] In some embodiments, the verification service automatically forwards call information to the relying party (or, in some embodiments, the relying party polls the verification service as needed). In various embodiments, the call information includes one or more of: invalid number, unknown number, no call in progress, the call start time (if there is a call in

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progress), the phone number for the current call, and a score indicating the validity of the number. The relying party evaluates this information using, for example, custom verification processing and policies, including the use of information about the user account or user access, in addition to the verification processing performed by the verification service provider. If the call information is automatically forwarded, the information from the verification service provider may arrive before the call is answered by the relying party, which allows the relying party to automatically determine how the call should be handled. In one embodiment, the call information (which can include one or more of device id, symmetric key, call start time, and number called) is sent through the same channel as audible sounds or as sounds that are not noticeable to the user, as described above, which the relying party matches against the ANI for the incoming call.

[0049] In some embodiments, the calling device is enrolled with the verification service provider, and the message communicated from a previously enrolled device to the verification service depends on at least one of a timestamp, a unique identifier, a symmetric key, and device information, which is passed to the Verification Service to prevent, for example, attempts to spoof the legitimate device. In some embodiments, the verification service evaluates the device information and unique identifier to determine a match against previous usage of the device that is recorded and stored at the verification service. Examples of device information include one or more unique or semi-unique software identifiers; one or more embedded hardware identifiers; a user-added hardware identifier like an SD Card or geolocation information; and a device "fingerprint" created from a combination of device settings, installed applications, system or application software versions, or contact list stored on the phone. In some embodiments, the device information is combined with other information, such as the time on file for the device, to create a single validity score that is available to the relying party for the current call. In some embodiments, the verification service creates a verification score for a device when a call is initiated. In various embodiments, the verification score is created using a variety of approaches that include one or more of combining the available factors to create a score by applying relative weighting to each of the available factors (e.g., based on historical and ongoing evaluation of the factors' effectiveness), combinatorial logic, a neural net or fuzzy logic, etc. In some embodiments, the relying party incorporates the score into a risk-based decision system to be used in conjunction with other variables that, in various embodiments, include account history,

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user security preferences, other available factors such as device information or challenges, the monetary (e.g., dollar) value of a transaction, service policies, etc. The decision system then selects from a range of appropriate responses, which include at least one of blocking access, requesting additional authentication factors, permitting access, etc.

[0050] In some embodiments, if the user's device cannot be verified by the verification service, or if the verification score is insufficient, the verification service contacts the user's device via an SMS or other communication channel, as described above with respect to device enrollment. For example, if a user's phone characteristics change, then the verification service can validate the phone again by sending an SMS to the phone that is captured by the verification client (residing on the device) and returned via a network connection. The changes could include one or more of an operating system upgrade, a spoof attempt, an application update, a device fingerprint based on device configuration information, a hardware change, the expiration of a symmetric key (which may have a forced expiration date), etc. The changes to the characteristics of the device may be sufficiently different so as to trigger a re-enrollment of the phone. In some embodiments, the re-enrollment is triggered by the verification service.

[0051] In some embodiments, the relying party specifies, to the verification service, the score that is required to complete a verification. If the user's device verification score on a call is too low, in some embodiments, the verification service reconfirms the (observed) ANI by sending an SMS or other communication to the phone number that is intercepted, processed, and responded to via a second channel. In some embodiments, this process is used to reconfirm the ANI and is used to raise the verification score. By automatically responding to the SMS (that originated from the verification service) with information about the call that is currently in progress, the verification service verifies that the ANI is not being spoofed, as it is unlikely that a spoofer is able to fake the routing of calls to the true number. This verification can be used to raise the verification score.

[0052] In some embodiments, a process that runs at least some of the time on a phone or other communications device is used to confirm a phone call to a third party, such as the callee or a verification service provider, the latter of which is then configured to convey an assurance to the callee. In one embodiment, the process running on the device determines that an outgoing

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phone call is being placed or in progress. As one example, the call is initiated from the app by a user either selecting a phone number from a stored list or entering a number. As another example, the app captures the start of a phone call by at least one of subscribing to system events such as the start of a new phone call or the entry of a number, modifying or inserting code related to the placing of calls, reading the contents of buffers or registers, identifying the context by reviewing instructions in the instruction pipeline, and observing side-effects of a phone call being placed, such as the display of information relating to a phone call on the screen of the device.

[0053] In some embodiments, an entity (e.g., verification service) that is associated with a communications infrastructure or the callee, initiates a communication to the portion of the verification process running on the device, requesting a verification of the phone call. In this case, the processing includes using, for example, one of an app, a portion of the operating system of the device or a device driver, a library that is part of an app, part of firmware (e.g., in the modem processor), etc.

[0054] In some embodiments, when the verification process confirms that the phone is used to call the callee device that received the caller id associated with the caller, the verification process communicates and conveys information related to at least one of a request for the confirmation; data associated with the phone call being placed; and data stored on the phone, such as a symmetric key, which is also stored by an entity associated with the recipient of the confirmation communication.

[0055] As the confirmation data is received (e.g., by the verification service), it is verified against the information that was previously stored for the user's device at the verification service using, for example, the scoring described above. If the confirmation data is deemed correct (e.g., properly formatted, associated with the expected data, and received within the expected time frame, which is an example of a system parameter), then an assurance is produced and conveyed to the callee or a party associated with the callee.

[0056] If the confirmation data is not correct or cannot be verified (e.g., the user's phone number was never registered, the user purchased a new phone with the old number, or a fraudster is attempting to trick the system), the failure to confirm is then conveyed to the callee or a party

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associated with the callee. The caller is then provided a confirmation that the call has either been verified or not been verified by the verification service.

[0057] In some embodiments, verification success or verification failure is then conveyed in-band through at least one of the same channel (e.g., primary communication channel) or via another channel. For example, the verification result can be conveyed as an audio signal in a voice channel, as an additional SMS message inserted into the SMS stream, a visual indication on a user's smartphone, or as messages presented through a secure display on the user's smartphone. In one embodiment, synchronous communication such as a phone call is automatically disconnected, with, in some embodiments, an audio or visual termination indication presented if the information cannot be correctly verified. In some embodiments, the callee is informed of whether the verification failed because the call was either confirmed to be spoofed or confirmed not to be spoofed, and if the latter, the reason why, if available. For example, a call will be confirmed to be spoofed if the caller device responds to the verification service provider that there is no such call, or no ongoing call, in response to receiving a request to send the response. If the caller device does not support the verification service (e.g., because the device does not have installed the verification mechanism), then it is inconclusive as to whether the call is spoofed or not. Other indications can also be generated. For example, if the caller device does not respond, the reason may include one or more of the device being off the network (which is an indication that the call is spoofed), that there is a temporary device or software failure, or that there is a temporary network failure. In some embodiments, the verification service provider, in such a situation, attempts to make a connection for some number of times that is a system parameter, after which it outputs a notification to the callee indicating what took place, including what types of responses the device normally sends and what types of responses were received during a recent session.

[0058] In some embodiments, the software installed on a calling device conveys call information to an intermediary verification service through a separate channel (e.g., that is different from the primary channel used to make the call being verified). In this example, the service acts as a trusted third party to verify the validity of the call (e.g., based on data associated with the phone call being placed, data stored on the phone such as a symmetric key, device information, etc.) and to provide the verification information to the called party. In some

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embodiments, a verification result is sent to the called party through another channel or retrieved by the called party as needed. In some embodiments, the verification service provides only the results of the verification to the called party without exposing any device information, such as a symmetric key, to the called party. In some embodiments, a caller device is registered a single time with a verification service and is then able to use the verification service with many called parties.

[0059] In some embodiments, the caller device registers with multiple verification services, as different relying parties may use different instances of verification services. In some embodiments, in order to increase availability, the verification service is also replicated for high availability and high volume of calls.

[0060] In some embodiments, a called party or callee queries the verification service to verify the validity of a caller's device through a second communication channel when the called party or callee recognizes the incoming call identifier (e.g., caller ID or ANI). In response to the query, the verification service then sends the verification result to the callee before the call is even initiated, which allows the callee to perform operations before the call is received, such as looking up the user's account information, deciding how to route the incoming call, or deciding what authentication, if any, should be used to further verify the validity of the caller.

[0061] In some embodiments, a verification service evaluates the quality of the data provided by the callee's device to create a score. In one example embodiment, the data score is combined with the age of the data to provide an overall quality score to the callee. In some embodiments, the verification service provides the call start time and/or device information for the relying party to evaluate.

[0062] In some embodiments, input from a relying party provides feedback on a particular phone call that indicates a problem with the user's device, such as a stolen device, possible spoof attempt, fraud related to a device, or a verification that subsequently proved to be errant. This information can then be incorporated into an overall reputation score of a caller's device.

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[0063] In some embodiments, the relying party provides its own verification service rather than using a third party service.

[0064] In some embodiments, the device is a smartphone with both a phone channel and a 3G/4G network channel. Other examples of devices include a smartphone, tablet, PC, phablet, or wearable computer with a processor and multiple communication channels or a single channel that is multiplexed across two different endpoints.

[0065] In some embodiments, the app installed on a device is enrolled when the user starts the app for the first time. When the app is started, the app automatically places a phone call to a phone number (e.g., that is embedded in the app) that is used for enrollment by the verification service. The corresponding verification service that is contacted captures the incoming ANI or caller ID of the phone and sends an SMS back to the phone containing a unique temporary identifier. The identifier is used as a secret key or is used to compute a secret key. For example, a method such as Diffie-Hellman key exchange or RSA key transport can be used, where a public key associated with the verification service is embedded in the app, and is used to compute the encrypted key that is generated by the device and communicated (e.g., in an encrypted manner) to the verification service. This communication can, for example, be sent using SMS or a regular Internet connection. In some embodiments, the user device stores the derived or generated secret key, and a storage associated with the verification service also stores the secret key. In some embodiments, the secret identifier or symmetric key is used to validate the device in future communications in some embodiments.

[0066] In some embodiments, once the phone is enrolled with a secret unique identifier, a call to a relying party is initiated in response, for example, to a user selecting a number from a pre-populated list or entering a new number from within the app. The app places the call to the relying party and securely conveys information about the call to a verification service via a message encrypted with the symmetric key, as discussed above, on a communication channel that includes one or more of 3G/4G networks, WiFi, Bluetooth, or any other appropriate channel/network. The relying party then captures the ANI data from the inbound call and queries the verification service about the call. The verification service then compares the information from the app with the request from the relying party and returns a verification result.

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[0067] In one embodiment of the enrollment process, the initial communication path used by the device to contact a verification service includes channels such email and SMS, instead of a phone call. In such a scenario, the verification service does not verify the ANI of the device, and instead verifies the corresponding communication identifiers associated with the initial communication path.

[0068] In another embodiment, the initial enrollment of a device by a relying party or the verification service, as well as occasional re-enrollments sessions, are combined with one or more additional authentication tools including PIN verification, password verification, Knowledge Based Authentication, geolocation information, or verification tools such as Name+Address+Phone checks or credit card information validation. Such additional authentication can also be combined with an ANI verification session, as described herein. Additional authentication and verification can also be used for additional user validation. This provides additional assurance features not only for the sessions where the additional authentication is used, but for other sessions as well. This is because the combined use, in a single session, of the extra authentication and the verification of the device specific identifier (e.g., such as that associated with caller id) allows the mechanisms to become associated with each other. Thus, a verification service can determine, with reasonable assurance/certainty that each session in which a given ANI is verified corresponds to a user with certain knowledge, access rights, or other authenticator.

[0069] In some embodiments, a security verification token received on the second channel is then returned via the first channel. For example, if a call is placed to the verification service, the service can contact the user's phone via another channel and provide a unique value. The unique value is then inserted into the phone call, for example, as a barely audible audio tone or an explicit voice to text reading out a number. The verification service can then decode the audio to match against the unique value.

[0070] In some embodiments, a relying party generates the unique value and sends it directly to the caller's phone on a second channel, where it is intercepted and then inserted into the phone call on the first channel (e.g., as a barely audible audio tone or an explicit voice to text reading out a number). In one example implementation, the relying party software detects the

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unique value through an automated system such as tone detection. The unique value is then compared with the ANI information from the phone call. If there is not a match, then it is determined that the ANI information is spoofed or is not representative of the caller device.

[0071] In some embodiments, when phone calls are directed to another number using call forwarding, the verification service determines, by sending an SMS or push notification, that the user's calls are not being received at the ANI that originated the call. In such a scenario, the result will be determined to be one or more of no response, correct device information but no call information from the forwarded phone, or incorrect device information from the forwarded phone. The verification service then provides the resulting status to the relying party, which determines how to interpret the result based on its policies.

[0072] In some embodiments, the verification functionality discussed above is implemented at the operating system level (e.g., of the phone), but the implementation may alternatively be at one or more of the application level, as a library that multiple applications can use, or a combination of operating system, application level, and libraries.

[0073] In some embodiments the ANI verification is used to enable automated password reset through an interactive voice response (IVR) system for users that forget their password. For example, when the IVR system is called by the user, the ANI is recognized and validated by the verification system. The IVR system can then, for example, create a new temporary password, send an email with half of the password, e.g., the word "brave," and indicate to the user, via audio or SMS, the other half of the password, e.g., "8317." The user would then combine the parts for the full temporary password, "brave8317," that can be used to log into the user's account instead of the password that the user forgot.

[0074] In some embodiments, if the user's phone is not previously enrolled with the verification service, the verification service can call the user's phone to verify that a call is in progress. As one example, when the user's phone is not previously enrolled with the verification service, the verification service can send an SMS with a unique identifier to the phone and request the user of the phone to respond via SMS. For example an SMS is sent to a user's device with the phrase "purple cow." The user can then manually return the same phrase in a reply SMS on the second channel, or "purple cow" can be inserted into the audio stream on the first

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channel. The verification service recognizes that the correct phrase has returned through a round trip, which confirms that the ANI is valid (as it may be difficult to spoof a phone network to receive the SMS message at a different phone number). In one example implementation, a verification process running on a phone that has not been enrolled with a verification service intercepts an incoming SMS or push notification, captures the phrase, and inserts it into the first channel as audio using text to speech. In another example implementation, a verification process running on the phone is configured to intercept the incoming SMS or push notification, capture the phrase, and automatically respond on another channel such as a 3G/4G network.

[0075] In various embodiments, typically unconventional channels can be used to communicate messages and responses to messages. For example, a user device can send such information by spoofing ANI data, where, instead of using the regular ANI of the device, the spoofed ANI is used to convey/encode the messages/responses to the messages without the use of a separate physical channel. Similarly, error messages, communication protocol messages, and other low-level messages can be used to convey information between the user device, the verifying party, the relying party, and the callee device.

[0076] In some embodiments, once the app on the user's phone is enrolled with the verification service and connected to an account at the relying party, the app can modify one or more of the caller ID or ANI to encode information about the incoming call. For example, the user's phone number can be combined with a one time code that is generated by the app based, for example, on the symmetric key and the current time. When the relying party observes the incoming ANI and Caller ID, it decodes the one time code based on the symmetric key for the account associated with the user and validates the timestamp. In one example implementation, the app can be populated with a list of "one time pad" codes for the account that are known only to the app and the relying party; or a function to compute the codes from a shared secret. When the one time code is received (e.g., encoded in the Caller ID or ANI and extracted by the relying party), the relying party can uniquely identify the account associated with the user/device and mark the code as used, for example, by comparing the observed ANI to one or more potential onetime codes associated with one or more accounts. A match that is made is used as evidence of the identity of the device. Using such functionality also serves to hide the ANI to callers who

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do not have the shared secret, thereby providing user privacy at the same time as providing assurance of the identity of the calling device.

[0077] In some embodiments, once the user's phone is enrolled with the verification service and connected to an account at a relying party, the user's phone can be used to authenticate the user when accessing the account from a different device. For example, suppose that the user enters an account identifier into a web browser on a PC. The relying party can contact the verification service, which in turn contacts the user's phone via SMS or a push notification, for example, to ask the user to confirm the account access. In some embodiments, the confirmation is one or more of a confirmation of a financial transaction or an agreement.

[0078] Figure 2A illustrates an embodiment of a process for verifying caller identification information. In some embodiments, process 200 is executed using telephonic device 102 of Figure 1. The process begins at 202 when an indication of a phone number to be called is received. As one example, the phone number is entered by a user of the phone. As another example, the phone is selected from a list of phone numbers.

[0079] At 204, contact with the callee is initiated using the indicated phone number. As one example, either a call or SMS is initiated to a callee/relying party. In some embodiments, the callee, while receiving the call, observes the ANI or caller ID information on the call, and makes a request to the verification service provider to verify the call (e.g., to determine whether the observed ANI data is spoofed).

[0080] At 206, a verification request is received. For example, in some embodiments, in response to receiving a request from the callee entity to verify the call that is in progress, the verification service provider sends, to the device, a verification request. For example, in order to verify the ANI data or caller ID observed by the callee, the verification service provider sends a message using the observed ANI data or caller ID. If the observed phone number (indicated by ANI data or caller ID) has not been spoofed, then the device used to initiate the call to the callee will also receive the verification request.

[0081] In some embodiments, as described above, the channel that is used for the verification service request to the calling device is different from the initial, primary

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communication channel used by the calling device to make the call (e.g., a separate, different backchannel is used to make the verification service request). For example, while the phone call is made using an audio channel, the verification request may be made using SMS.

[0082] In other embodiments, the same channel as the primary communications channel is used to make the verification request. In some embodiments, if the same channel is used, then the verification request is encoded in the channel in a manner that is not noticeable to an end-user of the calling device. For example, if an audio call has been initiated, the verification request can be encoded as barely audible signals that are decoded by the device.

[0083] At 208, a response message is generated. For example, suppose that an SMS is received from the verification service provider. In response to the verification request, a message is generated that includes information used to verify the call made to the callee. For example, the response to the verification service provider can include information about the phone call being made, such as the start time of the call, device information, or a secret value or unique identifier that is known only by the device and the verification service provider. As another example, the information includes computed values that are computed, for example, using keys or codes that are known only to the device and verification provider. In some embodiments, the device hides the verification messages such that these are not displayed or otherwise made presentable to the user of the calling device.

[0084] At 210, the generated message is transmitted, for example, to the verification service provider. In some embodiments, the verification service provider validates the information and makes a security determination based on the validation. The security determination is then passed to the relying party. Upon receiving the security determination, the relying party makes a security decision as to whether the observed phone number (ANI data or Caller ID) is verified to be correct. If the number is verified, then the relying party determines that the authentication is successful, otherwise the authentication is rejected. The relying party can take various actions based on the verification result, as described above.

[0085] Various channels can be used to transmit the generated message. For example, in some embodiments, the generated message is transmitted using the second communication channel that was initiated by the verification service provider. As another example, the

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generated message is transmitted using the primary communication channel initiated between the caller device and the callee.

[0086] In some embodiments, the security determination (or any other appropriate information) is passed to the relying party automatically. In some embodiments, the security determination is provided in response to a query by the relying party. For example, because different channels may be used for the initial call, the verification request, and the response message, delays may occur in the verification service provider being able to provide security determination information to the relying party. In such a scenario, in some embodiments, the relying party is configured to query or poll the verification service provider for security determination information (e.g., periodically until the information is available, after a delay, etc.).

[0087] In some embodiments, the information is sent to the verification service provider at the time that the call is initiated, without being prompted by the verification service provider (e.g., the calling device initiates contact with the verification service provider). For example, the calling device includes an app that is configured to recognize that a call has been initiated, and automatically sends information about the call (e.g., start time, enrolled key, etc.) to the verification service provider. The verification service provider can then, for example, provide a security determination to a relying party (either by proactively sending the security determination to the relying party, or providing the security determination when it is requested by the relying party).

[0088] Figure 2B illustrates an embodiment of a process for verification of caller identification information. In some embodiments, process 220 is executed by verification service provider 120 and/or relying party 118 of Figure 1. The process begins at 222 when a query to verify a first communications connection involving a first entity is received, the first communications connection/channel associated with an observed caller ID of a contacting entity. For example, suppose that a callee receives a phone call purporting to be from an observed caller ID/ANI. In order to determine whether the number has been spoofed, the callee contacts the verification service provider to validate the ANI/caller ID.

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[0089] At 224, a message is transmitted to a device associated with the observed ANI using a second communications channel. For example, in some embodiments, as described above, a back channel is initiated by the verification service provider to communicate with a device associated with the observed ANI. In some embodiments, the message includes information that is difficult for a spoofing attacker to predict, such as a serial number, a counter, a pseudo-random or random number, a number specific to a particular session or device, etc. In some embodiments, the second communications channel is a backchannel that is different from the first communications connection/channel. In other embodiments, the second communications channel is a backchannel that is encoded in the first communications channel.

[0090] At 226, a response to the message is received. For example, a device such as phone 102 of Figure 1 captures the message and in reply, sends a message that makes a reference to at least a portion of the message sent by the verification services provider. In some embodiments, the response is received by the verification service provider directly from the device. In other embodiments, the response is received via another entity (e.g., the entity that was called and that requested the verification, as described above).

[0091] At 228, the response is evaluated to perform a security determination. For example, in some embodiments, it is verified whether the response corresponds to the transmitted message. If so, as described above, then a positive security determination is made. If an invalid response is received, or no response at all is received, for example, within a threshold amount of time, then a negative security determination is made. At 230, the security determination is provided to the first entity, which performs a decision based on the security determination (e.g., whether to authenticate the first communications connection).

[0092] Figure 3A illustrates an embodiment of a process for enrolling a device. In some embodiments, process 300 is executed by phone 102 of Figure 1. The process begins at 302, when an application, such as an "app" described above, installed on the device communicates with a verification service provider. For example, the application either initiates a call or sends an SMS to the phone number for the verification service provider. As described above, in some embodiments, the number is known to the application installed on the device.

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[0093] At 304, a response to the initial communication is received. For example, in some embodiments, the verification service provider returns the call or SMS with a call or SMS using, for example, a one-time passcode (OTP) as the verification service provider's caller ID, as described above. In some embodiments, the device processes the response, for example, capturing the caller ID that includes the OTP sent by the verification service provider.

At 306, a response is generated. For example, in response to the verification service provider's reply, the device is configured to generate and send back a set of information to the verification service provider. One example of information included in the set is device information. Another example of information included in the set is a unique ID. In some embodiments, the unique ID is computed dynamically and the device stores it locally for future communications with the verification service provider. Another example of information included in the set is the OTP value previously sent by the verification service provider. In some embodiments, sending back the previously transmitted OTP value allows the verification service provider to verify the phone number of the device (i.e., because the enrolling app sends back the OTP that was sent by the verification service provider to a particular phone number, proof is established that the app being enrolled is installed at a device with that particular phone number to which the OTP was sent). The verification service provider validates the OTP value and stores any device information and/or unique identifiers sent by the device. At 308, the generated response is transmitted, for example, to the verification service provider via a network connection.

[0094] Figure 3B illustrates an embodiment of a process for enrolling a device. In some embodiments, process 320 is executed by verification service provider 120 and/or relying party 118 of Figure 1. The process begins at 322, when contact is received from a telephonic device associated with an observed phone number. For example, when a user uses a banking app installed on their smartphone for the first time, the app automatically calls a known verification service provider. At 324, a reply to the contact that includes a first value is transmitted using the observed phone number. For example, in response to receiving the call from the app on the smartphone, the verification service provider sends an SMS reply including a one-time passcode (OTP). At 326, a set of information is received. For example, the verification service provider receives, from a device associated with the observed phone number/caller ID/ANI, a response

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that includes a set of information. For example, the app installed on the phone, in response to receiving the message from the verification service provider, sends back the OTP value that was sent, as well as device information and a unique identifier. At 328, the received set of information is validated. For example, if the received information includes the previously sent OTP value, then the verification service provider verifies that the app is installed on a device that has the phone number that was observed in the original contact. If the information is validated, the device/app is then enrolled. For example, any device information or unique identifiers sent by the device/app are stored (e.g., in a user record of the bank with which the app is associated).

[0095] ADDITIONAL EXAMPLES

[0096] Figures 4-14 illustrate example environments in which enrollment of a device and verification of automatic number information data (e.g., caller id) is performed.

[0097] Figure 4 illustrates an example of an environment in which verification of caller identification information is performed. In this example, a user 402 enters, at 414, a phone number (416) into a smartphone device 404 or selects a number 416 that is already stored on the smartphone to place a call or send an SMS to a relying party 410 (i.e., callee). In some embodiments, relying party 410 is an example of callee 118 of Figure 1. In this example, call placement unit 406, which, in some embodiments, is an example of call placement unit 108 of Figure 1, captures the entry or selection of the phone number 416. In some embodiments, call placement unit 406 checks, at 418, the phone number 416 against a list of monitored phone numbers stored in data storage 408. If the phone number 416 is found in storage 408, information about the call is sent, at 424, to verification service 412, which, in some embodiments, is an example of verification service provider 120 of Figure 1. In some embodiments, check 418 is not performed against storage 408 and all phone numbers are sent to the verification service 412. When the relying party 410 receives the call, SMS, or push notification (420), the relying party 410 can detect the incoming phone number 416 and query, at 422, the verification service 412 to verify the incoming call. One example of communication 422 between the verification service 412 and the relying party 410 is a secure internet connection. In other embodiments, the communication channel includes one or more of Wi-Fi,

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3G/4G network, Bluetooth, audio, SMS, phone call, RDMA, interprocess communication within the same system, or any other communication channel.

[0098] Figure 5 illustrates an example of an environment in which enrollment of a device is performed. In this example, user 502 connects their smartphone device 504 with verification service 510, which, in some embodiments, is an example of verification service provider 120 of Figure 1. In some embodiments, a default phone number (514) is provided. In other embodiments, user 502 enters (526) a phone number for another verification service. In this example, the number is called, or an SMS is sent, at 516, to verification service 510.

[0099] Verification service 510 captures the inbound phone number and returns (518) either a call or an SMS to the same number to verify the number. Inbound interceptor 506, which, in some embodiments, is a portion of a communications unit such as communication unit 104 of Figure 1, recognizes the return call from the verification service 510 and initiates a network connection (520) to deliver a unique device identifier that is then stored (522) into local storage 512 by the verification service 510. The unique identifier is also stored locally at the smartphone device, at 524, into data storage 508 on smartphone device 504 for subsequent communication with the verification service. Once connected to the verification service, the smartphone device 504 can be used with each relying party or callee (e.g., relying party 410 of Figure 4) that uses the verification service with no additional enrollment steps.

[00100] Figure 6 illustrates an example of an environment in which verification of caller identification information is performed. In this example, verification using an application installed on a smartphone device (also referred to herein as an "app") is described. In this example, a user 602 starts, at 612, an app 606 installed on a smartphone 604. In this example, the app is configured to connect, using connection 614, to the relying party 610 with an account identifier. The relying party 610 performs a look up (616) of the associated phone number in account information 618. If the phone number is not found in the account information 618 or is not current, in some embodiments, the app 606 prompts the user 602 to enter the number.

[00101] In the example shown, the relying party generates a unique one time passcode (OTP) and sends the OTP as the caller id or ANI via a phone call or SMS (620) to the user's smartphone 604. Inbound interceptor 608, which in some embodiments, is an example of a

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portion of a communications unit such as communication unit 104 in Figure 1, captures the caller id of the inbound call or SMS and passes it, at 622, to app 606. App 606 relays the unique identifier to relying party 610 via the already established connection 614, to confirm that app 606 is running on the smartphone 604 that matches the account phone number in the account information 618. In some embodiments, the app can generate a second unique value and pass it with the OTP via the established connection 614, and the relying party 610 can store this second unique value with the user's account information 618 to use as a secret device identifier for the account. In some embodiments, the value is used later as a seed for encrypted communication between the smartphone 604 and the relying party 610.

[00102] Figure 7 illustrates an example of an environment in which verification of caller identification information is performed. In this example, a user 702 uses, at 712, a smartphone 704 to make a phone call (714) to a relying party 708 (also referred to herein as the "callee"). Relying party 708 passes, at 716, the user's phone number to verification service 710. In this example, verification service 710 sends an SMS message, at 722, to smartphone device 704. Inbound interceptor 706, which is an example of a portion of a communication unit such as communication unit 104 of Figure 1, captures the incoming SMS and recognizes that the message is from verification service 710. Inbound interceptor 706 then replies, at 718, with the device information and information about the call in progress. In this example, the reply 718 is sent via a 3G/4G network, WiFi, SMS, or any other appropriate network. The verification service 710 then validates the device and call information and provides a validation result (720) to relying party 708.

[00103] Figure 8 illustrates an example of an environment in which verification of caller identification information is performed. In this example, a user 802 starts, at 814, an app (806) installed on a smartphone device 804 in order to make a phone call (816) to a relying party 810 (also referred to herein as the "callee"). The relying party 810 passes, at 818, the user's phone number (e.g., obtained from caller id/ANI data) to verification service 812. In this example, the verification service then sends an SMS message (826) to smartphone device 804.

[00104] Inbound Interceptor 808, which in some embodiments is an example of a portion of a communication unit such as communication unit 104 of Figure 1, captures the incoming

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SMS and recognizes the message is from verification service 812. Inbound interceptor 808 can query (820) the caller app 806 to verify the current call number and status. Interceptor 808 replies, at 822, to the verification service, with the device information and information about the call in progress. In various embodiments, reply 822 is sent via a channel that includes one or more of a 3G/4G network, WiFi, SMS, or any other appropriate communication channel. The verification service then validates the device and call information and provides a validation result (824) to the relying party.

[00105] Figure 9 illustrates an example of an environment in which verification of caller identification information is performed. In the example shown, a user (902) starts/initiates a phone call at 914 through communication unit 906. In various embodiments, communication unit 906 is one or more of a communication unit such as communication unit 104 of Figure 1 and an app, such as app 806 of Figure 8, that are installed on smartphone device 904 and used to make a phone call (916) to relying party 910 (also referred to herein as the "callee").

[00106] In the example shown, relying party 910 passes, at 918, the user's phone number (the phone number indicated via caller id or ANI data that is observed by the relying party) to verification service 912. The verification service sends, at 920, an SMS message or other communication with a unique identifier to smartphone device 904. In various embodiments, the unique identifier includes one or more of a number, phrase, tone, or any other appropriate unique identifier.

[00107] Inbound interceptor 908, which in some embodiments, is an example of a portion of a communication unit such as communication unit 104 of Figure 1, captures the incoming message (920) and recognizes that the message is from verification service 912. The inbound interceptor extracts the unique identifier from message 920 and passes it (924) to communication unit 906.

[00108] In this example, the communication unit 906 inserts the unique identifier into the already open communication channel 916 to the relying party. In one embodiment, if communication channel 916 is an audio call, the unique identifier is then converted into a tone or spoken phrase (e.g., using text to speech) that is inserted into the audio call. The relying party 910 can capture the unique identifier and pass it to the verification service (912) for evaluation.

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[00109] The verification service 912 then verifies that the unique identifier is the expected result and sends a reply 922 to the relying party 910. In various embodiments, request (918), reply 922, and communication 920 with inbound interceptor 908 are sent via one or more of a 3G/4G network, WiFi, SMS, or any other appropriate communication channel/network.

[00110] Figure 10 illustrates an example of an environment in which verification of caller identification information is performed. In the example shown, a phone call is started (1010) by a user 1002 through a communication unit 1006 (which, in some embodiments, is an example of a communication unit such as communication unit 104 of Figure 1) on smartphone device 1004 in order to make a phone call (over communication channel 1012) to relying party 1018.

[00111] In the example shown, the relying party (or an entity associated with the relying party) generates a unique identifier, which includes one or more of a number, phrase, tone, or any other appropriate unique identifier. The relying party passes the unique identifier to the user's device 1004 via a second communication channel (1014), such as short message service (SMS).

[00112] Inbound interceptor 1008, which in some embodiments, is an example portion of a communication unit such as communication 104 of Figure 1, captures the incoming message sent via channel 1014 and recognizes that the message is from the relying party. The inbound interceptor extracts the unique identifier from message sent via channel 1014 and passes it, at 1016, to the communication unit 1006.

[00113] In the example shown, the communication unit 1006 inserts the unique identifier into the already open communication channel 1012 to the relying party. In one embodiment, using the already open communication channel 1012, the unique identifier is converted by the inbound interceptor 1008 into a tone or spoken phrase using text to speech, which is then inserted into communication channel 1012. The relying party receives the unique identifier, decodes, and verifies that it matches the expected value that was sent in message sent via channel 1014.

[00114] Figure 11 illustrates an example of an environment in which verification of caller identification information is performed. In the example shown, a phone call 1114 to relying

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party 1112 is started by a communication unit 1108, which, in some embodiments, is an example of a communication unit such as communication unit 104 of Figure 1. In this example, communication unit 1108 is a part of app 1106 installed on smartphone device 1104. In the example shown, the phone call is initiated when a user (1102) selects a phone number from a list that is already stored (e.g., in data store 1110) on the smartphone device.

[00115] Prior to, simultaneously, or immediately after starting call 1114, communication unit 1108 sends information to the relying party that is associated with the user-selected or provided phone number. The sent information includes information about the call, including one or more of a device identifier, call start time, and number called, that is sent via another communication path 1116 (which can be a network connection, SMS, etc.). The relying party compares the call information from the second path 1116 with the ANI observed on the first path to verify the source of the call.

[00116] Figure 12 illustrates an example of an environment in which verification of caller identification information is performed. In the example shown, a phone call (made over communication path 1214) to relying party 1212 is started by a communication unit 1208, which in some embodiments, is an example of a communication unit such as communication unit 104 of Figure 1. In the example shown, communication unit 1208 is a component of app 1206. In this example, the phone call is started when a user 1202 selects, at 1216, a phone number from a list that is already stored in data storage 1210 of telephonic device 1204. Once the relying party answers call 1214, the communication unit 1208 sends information to the relying party about the call, including one or more of a device identifier, call start time, and number called. In the example shown, the information is sent, via the same communication path 1214, as one of more of an audible series of tones, an audible voice, as sounds that are not noticeable to the user, etc. The relying party detects and validates the received call information against the ANI sent by the caller.

[00117] Figure 13 illustrates an example of an environment in which verification of caller identification information is performed. In the example shown, app 1306 installed on smartphone device 1304 has been previously connected to an account at relying party 1310. The relying party account is accessed, at 1312, by computing device 1308, such as a desktop or

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laptop, when a user (1302) attempts, at 1324, to log into the account. The relying party recognizes the account and contacts, at 1314, app 1306 on the associated user's device 1304. The user's device requests, at 1316, that the user confirm the account access. The user, at 1318, either confirms or denies the access via the app. The app provides the confirmation (1320) back to the relying party, which, at 1322, grants or denies access via the computing device.

[00118] Figure 14 illustrates an example of an environment in which verification of caller identification information is performed. In this example, app 1406 installed on smartphone 1404 places a phone call (1412) to relying party 1408 when a user (1402) enters a phone number at 1414. In this example, the app modifies the caller id or ANI of call 1412 to be a unique identifier that can be decoded by the relying party. The unique identifier is decoded by retrieving, at 1416, information that was previously stored in data storage 1410 when the instance of app 1406 was enrolled with the relying party.

[00119] Although the foregoing embodiments have been described in some detail for purposes of clarity of understanding, the invention is not limited to the details provided. There are many alternative ways of implementing the invention. The disclosed embodiments are illustrative and not restrictive.

[00120] WHAT IS CLAIMED IS:

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CLAIMS

1. A system, comprising:

a verification service provider, configured to, using one or more processors:

enroll a first device with the verification service provider, wherein enrolling the first device includes associating, by the verification service provider, the first device with device information comprising at least one of a software identifier, an embedded hardware identifier, and a device fingerprint, wherein the device fingerprint is generated based at least in part on a set of configuration information associated with the first device;

store, at the verification service provider, the device information associated with the first device;

obtain, at the verification service provider, information transmitted by a second device associated with a communications connection;

perform, at the verification service provider, a security determination at least in part by determining whether the obtained information transmitted by the second device matches at least a portion of the stored device information associated with the enrolled first device; and

based at least in part on the security determination, select an action comprising at least one of blocking the communication, requesting additional authentication, and permitting the communication.

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
16/785,423	02/07/2020	2653	0.00	MJAKP016C2	1	1

CONFIRMATION NO. 9490

FILING RECEIPT

21912
VAN PELT, YI & JAMES LLP
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CUPERTINO, CA 95014

OC000000114981394

Date Mailed: 02/27/2020

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

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Inventor(s)

Bjorn Markus Jakobsson, Portola Valley, CA;

Applicant(s)

RightQuestion, LLC, Portola Valley, CA;

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CON of 16/180,373 11/05/2018
which is a CON of 14/535,064 11/06/2014
which claims benefit of 61/901,322 11/07/2013

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

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If Required, Foreign Filing License Granted: 02/25/2020

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 16/785,423**

Projected Publication Date: Request for Non-Publication Acknowledged

Non-Publication Request: Yes

Early Publication Request: No
**** SMALL ENTITY ****
Title

VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA

Preliminary Class

379

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

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LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/785,423	02/07/2020	Bjorn Markus Jakobsson	MJAKP016C2

CONFIRMATION NO. 9490

21912
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CUPERTINO, CA 95014

FORMALITIES LETTER

OC000000114981595

Date Mailed: 02/27/2020

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is missing.
- The application search fee must be submitted.
- The application examination fee must be submitted.
- Surcharge as set forth in 37 CFR 1.16(f) must be submitted.
  The surcharge is due for any one of:
  - late submission of the basic filing fee, search fee, or examination fee,
  - late submission of inventor's oath or declaration,
  - filing an application that does not contain at least one claim on filing, or
  - submission of an application filed by reference to a previously filed application.

SUMMARY OF FEES DUE:

The fee(s) required within **TWO MONTHS** from the date of this Notice to avoid abandonment is/are itemized below. Small entity discount is in effect. If applicant is qualified for micro entity status, an acceptable Certification of Micro Entity Status must be submitted to establish micro entity status. (See 37 CFR 1.29 and forms PTO/SB/15A and 15B.)

- $ **75** basic filing fee.
- $ **80** surcharge.
- $ **330** search fee.
- $ **380** examination fee.
- $(**0**) previous unapplied payment amount.
- $ **865** TOTAL FEE BALANCE DUE.

Items Required To Avoid Processing Delays:

Applicant is notified that the above-identified application contains the deficiencies noted below. No period for reply is set forth in this notice for correction of these deficiencies. However, if a deficiency relates to the inventor's

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oath or declaration, the applicant must file an oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each actual inventor no later than the expiration of the time period set in the "Notice of Allowability" to avoid abandonment. See 37 CFR 1.53(f).

- A properly executed inventor's oath or declaration has not been received for the following inventor(s):
  Bjorn Markus Jakobsson

Replies must be received in the USPTO within the set time period or must include a proper Certificate of Mailing or Transmission under 37 CFR 1.8 with a mailing or transmission date within the set time period. For more information and a suggested format, see Form PTO/SB/92 and MPEP 512.

Replies should be mailed to:

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Commissioner for Patents
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Alexandria VA 22313-1450

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 16/785,423

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	75		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	330		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	380		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	1 minus 20 =	*	x 50 =	0.00	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	1 minus 3 =	*	x 230 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	785		TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	16785423
Filing Date	2020-02-07
First Named Inventor	Bjorn Markus Jakobsson
Art Unit	2653
Examiner Name	Not Assigned
Attorney Docket Number	MJAKP016C2

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

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U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20060101334		2006-05-11	LIAO JERRY CHINGHSIEN	
	2	20070136806		2007-06-14	BERMAN REUBEN	
	3	20170195310		2017-07-06	TYLER SIMON PAUL	

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS,
AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0070

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

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NON-PATENT LITERATURE DOCUMENTS			Remove
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		
If you wish to add additional non-patent literature document citation information please click the Add button			Add

EXAMINER SIGNATURE			
Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Yeu-Ting George Cheng/	Date (YYYY-MM-DD)	2020-03-12
Name/Print	Yeu-Ting George Cheng	Registration Number	69408

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	38848817
Application Number:	16785423
International Application Number:	
Confirmation Number:	9490
Title of Invention:	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA
First Named Inventor/Applicant Name:	Bjorn Markus Jakobsson
Customer Number:	21912
Filer:	Yeu-Ting George Cheng/Elaine Nguyen
Filer Authorized By:	Yeu-Ting George Cheng
Attorney Docket Number:	MJAKP016C2
Receipt Date:	12-MAR-2020
Filing Date:	07-FEB-2020
Time Stamp:	15:07:24
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	MJAKP016C2_IDS_01_SB08.pdf	1053077 60ccadbb19681ad463f502cb4420abb7c1901481	no	4

Warnings:

Information:	
Total Files Size (in bytes):	1053077

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

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Electronic Acknowledgement Receipt

EFS ID:	38919784
Application Number:	16785423
International Application Number:	
Confirmation Number:	9490
Title of Invention:	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA
First Named Inventor/Applicant Name:	Bjorn Markus Jakobsson
Customer Number:	21912
Filer:	Yeu-Ting George Cheng/Elaine Nguyen
Filer Authorized By:	Yeu-Ting George Cheng
Attorney Docket Number:	MJAKP016C2
Receipt Date:	19-MAR-2020
Filing Date:	07-FEB-2020
Time Stamp:	21:56:01
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	MJAKP016C2_IDS_02_SB08.pdf	1052860 f5234a932a04c1af79eae623d1f7e8d34171 56b4	no	4

Warnings:

Information:	
Total Files Size (in bytes):	1052860

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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	16785423
Filing Date	2020-02-07
First Named Inventor	Bjorn Markus Jakobsson
Art Unit	2653
Examiner Name	Not Assigned
Attorney Docket Number	MJAKP016C2

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	9332022		2016-05-03	ASHLEY PETER	

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U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20100082758		2010-04-01	GOLAN TAL	
	2	20170085584		2017-03-23	GOUTAL SEBASTIEN	

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							

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EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS,
AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0078

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		

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Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	Art Unit	2653
	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Yeu-Ting George Cheng/	Date (YYYY-MM-DD)	2020-03-19
Name/Print	Yeu-Ting George Cheng	Registration Number	69408

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	8365258		2013-01-29	DISPENSA STEVEN	
	2	10122715		2018-11-06	DISPENSA STEPHEN T	

If you wish to add additional U.S. Patent citation information please click the Add button. Add

U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20050097320		2005-05-05	GOLAN LIOR	
	2	20060053279		2006-03-09	COUEIGNOUX PHILIPPE J M	
	3	20070136573		2007-06-14	STEINBERG JOSEPH	
	4	20070143407		2007-06-21	AVRITCH PETER S	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

	5	20090260064		2009-10-15	MCDOWELL JOEL RICHARD	
	6	20120253810		2012-10-04	SUTTON TIMOTHY S	
	7	20130104198		2013-04-25	GRIM EVAN TYLER	
	8	20130185775		2013-07-18	DISPENSA STEPHEN T	

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	2011100489	JP		2011-05-19	BANK OF TOKYO MITSUBISHI UFJ		

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NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	Entrust: "Strong Multifactor Authentication Methods from Entrust IdentityGuard," https://web.archive.org/web/20110825101942/http://www.entrust.com/strong-authentication/authenticators.htm. August 25, 2011	
	2	Entrust: Mobile Authentication and Transaction Verification1,2,3, https://web.archive.org/web/20110814071521/http://www.entrust.com/mobile-security. August 14, 2011	

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS, AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0083

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Yeu-Ting George Cheng/	Date (YYYY-MM-DD)	2020-04-03
Name/Print	Yeu-Ting George Cheng	Registration Number	69408

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Electronic Acknowledgement Receipt

EFS ID:	39056499
Application Number:	16785423
International Application Number:	
Confirmation Number:	9490
Title of Invention:	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA
First Named Inventor/Applicant Name:	Bjorn Markus Jakobsson
Customer Number:	21912
Filer:	Yeu-Ting George Cheng/Elaine Nguyen
Filer Authorized By:	Yeu-Ting George Cheng
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Filing Date:	07-FEB-2020
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Application Type:	Utility under 35 USC 111(a)

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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	MJAKP016C2_IDS_03_SB08.pdf	1057818 e3ffcd8b70215813e46da6138969bb4420f6dc59	no	6

Warnings:

Information:					
2	Foreign Reference	Reference_JP2011100489.pdf	2705904 a0bb26d03f4a8e84cc1434204f9592bf92bf3e8c	no	26
Warnings:					
Information:					
3	Non Patent Literature	1_Entrust1_Strong_Multifactor_Authentication_Methods_from_Entrust_IdentityGuard.pdf	487784 e4dadfa33add82e1c57857559034147bc4c19f3c	no	4
Warnings:					
Information:					
4	Non Patent Literature	2_Entrust2_Mobile_Authentication_and_Transaction_Verification.pdf	300505 c9c7504d3bcf41e5fc5684bcfc13861aea8b2887	no	2
Warnings:					
Information:					
5	Non Patent Literature	3_Entrust4_Proven_Transaction_Verification_on_Smartphones_and_Mobile_Devices.pdf	282158 fef06965e1ef1d824fa49aaaa6527bbd72a9934e	no	2
Warnings:					
Information:					
6	Non Patent Literature	4_Entrust3_WP_Securing_Whats_At_Risk_July08.pdf	5622406 76d79f17dbc8417ed2bc857a2bf40d9602064f93	no	20
Warnings:					
Information:					
7	Non Patent Literature	5_eSphinx4_Cyota_launches_new_authentication_platform_for_online_banking.pdf	135868 53f5b90a86023145d089a6a5ba7b113cebe6c546	no	1
Warnings:					
Information:					
8	Non Patent Literature	6_eSphinx6_Cyota_and_Quova_Reducing_Online_Fraud_with_Cyotas_eVision_Technology.pdf	311165 62c0026a87c10955edd9f332751c7d7efe04decd	no	2
Warnings:					
Information:					

9	Non Patent Literature	7_eSphinx3_Cyota_eSphinx.pdf	236655 5306d98f5ce82dfb3b6a84f2eafd7278adb2b35d	no	2
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Information:					
10	Non Patent Literature	8_eSphinx5_Cyota_releases_eSphinx_online_authentication_package.pdf	221669 a2f6a68ddc70cb9e6ea7ef7076289caf07b656ad	no	2
Warnings:					
Information:					
11	Non Patent Literature	9_eSphinx1_How_Does_it_Work.pdf	220908 e41398b947f983d695caa8b50fd5f7a12281e7bf	no	2
Warnings:					
Information:					
12	Non Patent Literature	10_eSphinx2_Key_Features.pdf	208932 a009b1a3bebdf2b0d06cff7d9d99a1d19bcc6f25	no	2
Warnings:					
Information:					
13	Non Patent Literature	11_Green_Armor_1_December_8_2005_Press_Release.pdf	134478 2f8d9c67ff4cd81e9234059f19689fcf6668f559	no	2
Warnings:					
Information:					
14	Non Patent Literature	12_Green_Armor_2_Green_Armor_Solutions_Identity_Cues_Products.pdf	833810 75cc1682cd0cf48f50d7a4bd5dd17d47bd41e297	no	6
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Information:					
15	Non Patent Literature	13_Green_Armor_3_Green_Armor_Solutions_Identity_Cues_Two_Factor.pdf	184736 9ee2d9b1995b37a673c5729b96f0edd16c91d238	no	2
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Information:					

16	Non Patent Literature	14_RSA1_7035_CONPRO_SB_0711_RSA_Identity_Protection_and_Verification_Suit.pdf	1539929 477e0458dd69fd97ecfa22172e0d0342b1e0a74d	no	9
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Information:					
17	Non Patent Literature	15_RSA2_9697_AATF_SB_0808_RSA_Adaptive_Authentication_overview_solution_brief.pdf	469392 adf57f3d75eed537506065f6cd353973e46aa11f	no	5
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Information:					
18	Non Patent Literature	16_RSA3_AAAM_SB_0208_RSA_Adaptive_Authentication.pdf	543097 50bf0c518a9ccad70833cfadc5384a2178676b3e	no	5
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Information:					
19	Non Patent Literature	17_Ref_Toopher_1.pdf	332798 2d23b0888641687a560995ac1a37dc799cc69c7a	no	2
Warnings:					
Information:					
20	Non Patent Literature	18_Ref_Toopher_2_Toopher_Developer_Documentation.pdf	917930 00442fe4f739938b450a2484599a986e17c79008	no	3
Warnings:					
Information:					
21	Non Patent Literature	19_US_Provisional_Patent_Application_No_61551370.pdf	13174017 e233b5552f426d58d38e537fb4f3f224f9effc61	no	15
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National Stage of an International Application under 35 U.S.C. 371

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New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Espacenet

Bibliographic data: JP2011100489 (A) — 2011-05-19

USER CONFIRMATION DEVICE AND METHOD, AND PROGRAM

Inventor(s): KATO TAKANARI ± (KATO TAKANARI)

Applicant(s): BANK OF TOKYO MITSUBISHI UFJ ± (BANK OF TOKYO-MITSUBISHI UFJ LTD)

Classification: **- international:** ***G06F15/00; G06F21/20; H04L9/32***
- cooperative:

Application number: JP20110022895 20110204 Global Dossier

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Abstract of JP2011100489 (A)

PROBLEM TO BE SOLVED: To enhance accuracy of user confirmation without impairing convenience of a user. SOLUTION: A user confirmation device includes: an extraction means extracting user agent information set in an HTTP (HyperText Transfer Protocol) header from a packet received from a terminal device; an information management means making a storage means store the user agent information extracted from the packet received from the terminal device operated by each user by the extraction means associatively with user identification information of each user; and a decision means collating the user agent information extracted from the packet received from an optional terminal device by the extraction means with the user agent information stored in the storage means associatively with the user identification information of the user operating the optional terminal device, and deciding whether the user agent information corresponds to the user agent information stored in the storage means to decide whether the user operating the optional terminal device is a valid user. ;COPYRIGHT: (C)2011,JPO&INPIT

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS, AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0093

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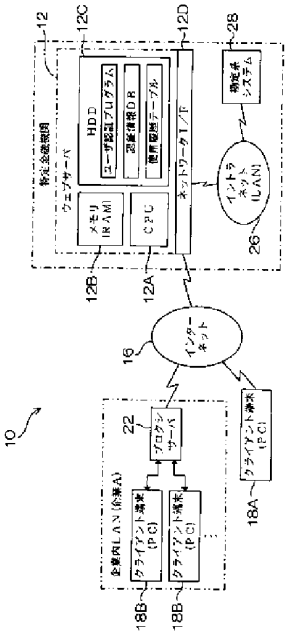
Ｆターム(参考)　5B285 AA01 BA01 BA03 CA02 CA04 CA05 CA12 CA16 CA17 CA32 CB02 CB43 CB45 CB47 CB52 CB55 CB56 CB62 CB73 CB84 DA05 DA06
5J104 AA07 AA16 EA03 EA16 KA01 NA05 NA36 PA07

(54)【発明の名称】ユーザ確認装置、方法及びプログラム

(57)【要約】
【課題】ユーザの利便性を損なうことなくユーザ確認の精度を向上させる。
【解決手段】端末装置より受信したパケットから、HTTPヘッダに設定されているユーザエージェント情報を抽出する抽出手段と、個々のユーザが操作する端末装置より受信したパケットから抽出手段によって各々抽出されたユーザエージェント情報を、個々のユーザのユーザ識別情報と対応付けて記憶手段に各々記憶させる情報管理手段と、任意の端末装置より受信したパケットから抽出手段によって抽出されたユーザエージェント情報を、任意の端末装置を操作しているユーザのユーザ識別情報と対応付けて記憶手段に記憶されているユーザエージェント情報と照合し、記憶手段に記憶されているユーザエージェント情報と対応しているか否かを判定することで、任意の端末装置を操作しているユーザが正当なユーザか否かを判断する判断手段と、を含むユーザ確認装置を提供する。
【選択図】図１



【特許請求の範囲】
【請求項１】
インターネット層のプロトコルとしてIPが適用され、アプリケーション層のプロトコルとしてHTTPが適用されて端末装置より受信したパケットから、当該パケットのHTTPヘッダに設定されているユーザエージェント情報を抽出する抽出手段と、
個々のユーザが操作する端末装置より受信したパケットから前記抽出手段によって各々抽出されたユーザエージェント情報を、前記個々のユーザのユーザ識別情報と対応付けて記憶手段に各々記憶させる情報管理手段と、
任意の端末装置より受信したパケットから前記抽出手段によって抽出されたユーザエージェント情報を、前記任意の端末装置を操作しているユーザのユーザ識別情報と対応付けて前記記憶手段に記憶されているユーザエージェント情報と照合し、前記記憶手段に記憶されているユーザエージェント情報と対応しているか否かを判定することで、前記任意の端末装置を操作しているユーザが正当なユーザか否かを判断する判断手段と、
を含むユーザ確認装置。
【請求項２】
前記ユーザエージェント情報は、前記端末装置にインストールされている該端末装置のオペレーティングシステム名及びオペレーティングシステムのバージョン情報のいずれか若しくは両方、前記端末装置にインストールされているブラウザ名及びブラウザのバージョン情報のいずれか若しくは両方、またはオペレーティングシステム及びブラウザのいずれか若しくは両方のパッチ情報から選択される１以上を含むことを特徴とする請求項１記載のユーザ確認装置。
【請求項３】
前記個々のユーザが使用している電子メールアドレスを前記個々のユーザのユーザ識別情報と対応付けて各々管理する電子メールアドレス記憶手段と、
前記判断手段により、前記任意の端末装置を操作しているユーザが正当なユーザでないと判断された場合に、前記判断手段と異なる方法によって前記ユーザが正当なユーザか否かを確認するための所定のウェブページへのリンクが付加された電子メールを、前記ユーザのユーザ識別情報と対応付けて前記電子メールアドレス記憶手段に記憶されている電子メールアドレスへ送信する送信手段と、
を含む請求項１または２に記載のユーザ確認装置。
【請求項４】
請求項１から３いずれかに記載のユーザ確認装置にネットワーク回線を介して接続された端末装置を含むユーザ認証システムであって、
前記端末装置は、該端末装置にインストールされているユーザエージェント情報を、前記ユーザ確認装置に対してパケット送信する際、HTTPヘッダに設定することを特徴とするユーザ認証システム。
【請求項５】
インターネット層のプロトコルとしてIPが適用され、アプリケーション層のプロトコルとしてHTTPが適用されて端末装置より受信したパケットから、当該パケットのHTTPヘッダに設定されているユーザエージェント情報をサーバが抽出し、
個々のユーザが操作する端末装置より受信したパケットから前記抽出されたユーザエージェント情報を、前記個々のユーザのユーザ識別情報と対応付けて前記サーバの記憶手段に前記サーバが各々記憶し、
任意の端末装置より受信したパケットから前記抽出されたユーザエージェント情報を、前記任意の端末装置を操作しているユーザのユーザ識別情報と対応付けて前記記憶手段に記憶されているユーザエージェント情報と照合し、前記記憶手段に記憶されているユーザエージェント情報と対応しているか否かを判定することで、前記任意の端末装置を操作しているユーザが正当なユーザか否かを前記サーバが判断すること、
を含むユーザ確認方法。
【請求項６】

前記ユーザエージェント情報は、前記端末装置にインストールされている該端末装置のオペレーティングシステム名及びオペレーティングシステムのバージョン情報のいずれか若しくは両方、前記端末装置にインストールされているブラウザ名及びブラウザのバージョン情報のいずれか若しくは両方、またはオペレーティングシステム及びブラウザのいずれか若しくは両方のパッチ情報から選択される１以上を含むことを特徴とする請求項５記載のユーザ確認方法。

【発明の詳細な説明】

【技術分野】

【０００１】

本発明はユーザ確認装置、方法及びプログラムに係り、特に、端末装置を操作しているユーザが正当なユーザか否かを確認するユーザ確認装置、該ユーザ確認装置に適用可能なユーザ確認方法、及び、コンピュータを前記ユーザ確認装置として機能させるためのユーザ確認プログラムに関する。

【背景技術】

【０００２】

予め登録したユーザに対してオンラインで所定のサービスを提供するウェブサイトでは、端末装置を介してウェブサイトにアクセスしてきた利用者にユーザＩＤ及びパスワードを入力させ、入力されたユーザＩＤとパスワードの組合わせが登録されているか否かに基づいて、アクセスしてきた利用者が正当なユーザか否かを確認するユーザ確認方法が採用されることが一般的である。しかし、上記のユーザ確認方法は、仮にユーザＩＤとパスワードが他者へ漏洩してしまった場合に、ユーザＩＤとパスワードを知った者が正当なユーザになりすまして不正にアクセスすることが可能になってしまうという欠点がある。

【０００３】

上記に関連して特許文献１には、ユーザＩＤ及びパスワードに加え、電話交換機から通知された発信者の電話番号が登録ユーザが使用する電話回線の電話番号と一致しているか否かも判定することで、ユーザの認証を行う技術が開示されている。

【０００４】

また特許文献２には、サービスの利用を許容するＩＰアドレス（及びリンク元ＵＲＬ）をＩＤ・パスワードと共にデータベースに保存しておき、ＩＤ・パスワードによる認証に加え、アクセス元ＩＰアドレスがデータベースに登録されているか否か（及び、アクセス信号中にリンク元ＵＲＬが存在している場合は、当該リンク元ＵＲＬがデータベースに登録されているか否か）を判断することで、サービスの利用を許容するか否かを判断する技術が開示されている。

【先行技術文献】

【特許文献】

【０００５】

【特許文献１】特開平２０００－２０９２８４号公報

【特許文献２】特開平２００１－３２５２２９号公報

【発明の概要】

【発明が解決しようとする課題】

【０００６】

特許文献１，２に記載の技術は、電話番号やＩＰアドレスを利用してアクセス元の端末装置が正当な端末装置か否かを判断することで、アクセス元の端末装置を操作しているユーザが正当なユーザか否か（第三者が正当なユーザになりすましていないか否か）を確認している。しかしながら、特許文献１に記載の技術は、電話番号を用いることで端末装置を一意に特定できるという利点を有しているものの、電話交換機を介してネットワークに接続された端末装置以外には適用できないという問題がある。

【０００７】

また、特許文献２に記載の技術で用いられているＩＰアドレスは、グローバルＩＰアドレスが固定的に付与された端末装置であれば常に一定であるものの、このような端末装置

はごく少数であり、殆どの端末装置は、例えばインターネットへのアクセス時に、インターネット・サービス・プロバイダ（Internet service provider：インターネット接続業者、以下単に「プロバイダ」という）が保有している多数のグローバルＩＰアドレスの中から任意のＩＰアドレスが自動的に割り当てされるので、アクセスの都度ＩＰアドレスが相違する。このため、特許文献２に記載の技術のように、ＩＰアドレスが一致しているか否かに基づいてユーザの確認や認証を行った場合、正当なユーザによるアクセスを不正アクセスと誤判断したり、正当でないユーザを正当なユーザと誤判断する恐れがある。

【０００８】

また、なりすましを防止してセキュリティ性を向上させる技術として、ユーザＩＤとパスワードに基づくユーザ認証に先立ち、電子証明書を利用して端末装置の認証を行う技術も知られている。この技術を適用すれば、仮にユーザＩＤとパスワードが他者へ漏洩してしまったとしても、ユーザＩＤとパスワードを知った者が正規の電子証明書がインストールされた端末装置を操作しない限りは不正を防止できる。但し、この技術を適用するためには、端末装置に電子証明書をインストールするという煩雑な作業を行う必要があり、ユーザの負担が大きいという問題がある。

【０００９】

本発明は上記事実を考慮して成されたもので、ユーザの利便性を損なうことなくユーザ確認の精度を向上させることができるユーザ確認装置、ユーザ確認方法及びユーザ確認プログラムを得ることが目的である。

【課題を解決するための手段】

【００１０】

端末装置との通信におけるアプリケーション層のプロトコルとしてＨＴＴＰ(HyperText Transfer Protocol)を適用した場合、端末装置から受信するパケットにはＨＴＴＰヘッダが付加されるが、このＨＴＴＰヘッダにはユーザエージェント（User-Agent）情報が含まれている。ユーザエージェント情報は、ＨＴＴＰプロトコル上でフォーマット等が規定されておらず、任意の文字列を設定可能とされている。例えば端末装置がＰＣ（Personal Computer：パーソナル・コンピュータ）等のコンピュータであり、当該コンピュータからパケットを送信するアプリケーションがブラウザ（browser：閲覧ソフト）である場合、ブラウザのデフォルトの設定では、ユーザエージェント情報として、当該コンピュータ上で動作しているＯＳ（オペレーティング・システム：Operating System）のバージョン等を表す情報と、ブラウザのバージョン等を表す情報を含む情報が設定される。また、コンピュータを操作するユーザによっては、ユーザエージェント情報として所望の文字列が送信されるように、ブラウザ等の設定が予め変更される場合もある。

【００１１】

デフォルトの設定のブラウザによって設定されるユーザエージェント情報には、ＯＳやブラウザのバージョン以外に、ＯＳやブラウザにパッチがどこまで当たっているかといった情報も含まれているので、デフォルトの設定のブラウザによってユーザエージェント情報が設定される場合、同一のユーザエージェント情報を送信する端末装置は存在するものの、個々の端末装置が送信するユーザエージェント情報の相違度は高い。また、ユーザエージェント情報は、ＯＳやブラウザに新たなパッチが当てられたり、バージョンアップや入れ替えが行われれば内容が変更されるが、ＯＳやブラウザに新たなパッチを当てられたり、ＯＳやブラウザのバージョンアップや入れ替えが行われて内容が変更される頻度は非常に低いので、個々の端末装置から送信されるユーザエージェント情報はおよそ一定とみなすことができる。また、ユーザエージェント情報として所望の文字列が送信されるようにユーザによって予め設定された場合、個々の端末装置が送信するユーザエージェント情報の相違度は更に高くなる。

【００１２】

本願発明者は上記事実に着目し、或るユーザが操作する端末装置から以前に受信したパケットのＨＴＴＰヘッダに設定されているユーザエージェント情報全体を記憶しておき、同一と推定されるユーザが操作する端末装置から受信したパケットのＨＴＴＰヘッダに設

定されているユーザエージェント情報全体を、記憶しているユーザエージェント情報全体と照合することで、ユーザエージェント情報のフォーマットや内容が事前に変更設定されていたとしても、これを検知することなく、今回受信したパケットを送信した端末装置が、以前受信したパケットを送信した端末装置と同一か否かを判定することができ、ユーザ確認の精度を向上させることができることに想到して本発明を成すに至った。

【００１３】

上記に基づき第１の発明に係るユーザ確認装置は、インターネット層のプロトコルとしてＩＰが適用され、アプリケーション層のプロトコルとしてＨＴＴＰが適用されて端末装置より受信したパケットから、当該パケットのＨＴＴＰヘッダに設定されているユーザエージェント情報全体を抽出すると共に、前記パケットからアクセス元ＩＰアドレスを抽出する抽出手段と、個々のユーザが操作する端末装置より受信したパケットから前記抽出手段によって各々抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体を、前記個々のユーザのユーザ識別情報と対応付けて記憶手段に各々記憶させる情報管理手段と、任意の端末装置より受信したパケットから前記抽出手段によって抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体を、前記任意の端末装置を操作しているユーザのユーザ識別情報と対応付けて前記記憶手段に記憶されているアクセス元ＩＰアドレス及びユーザエージェント情報全体と照合し、前記記憶手段に記憶されているアクセス元ＩＰアドレス及びユーザエージェント情報全体と対応しているか否かを各々判定することで、前記任意の端末装置を操作しているユーザが正当なユーザか否かを判断する判断手段と、を含み、前記判断手段は、前記受信したパケットから抽出されたアクセス元ＩＰアドレスについては、前記記憶手段に記憶されているアクセス元ＩＰアドレスとの所定ビット単位の一致率が閾値以上か否かを判定することで、前記受信したパケットから抽出されたアクセス元ＩＰアドレスが前記記憶手段に記憶されているアクセス元ＩＰアドレスと対応しているか否かを判定し、前記受信したパケットから抽出されたユーザエージェント情報全体については、前記記憶手段に記憶されているユーザエージェント情報全体と同一か否かを判定することで、前記受信したパケットから抽出されたユーザエージェント情報全体が前記記憶手段に記憶されているユーザエージェント情報と対応しているか否かを判定することを特徴としている。

【００１４】

第１の発明は、インターネット層のプロトコルとしてＩＰ（Internet Protocol）が適用され、アプリケーション層のプロトコルとしてＨＴＴＰが適用されて端末装置より受信したパケットから、当該パケットのＨＴＴＰヘッダに設定されているユーザエージェント情報全体を抽出すると共に、前記パケットからアクセス元ＩＰアドレスを抽出する抽出手段を備えており、情報管理手段は、個々のユーザが操作する端末装置より受信したパケットから抽出手段によって各々抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体を、個々のユーザのユーザ識別情報と対応付けて記憶手段に各々記憶させる。なお、ユーザ識別情報としては、例えば端末装置を操作する個々のユーザによって入力されたユーザＩＤや、このユーザＩＤから一意に定まる他の識別情報を適用することができる。また、ユーザエージェント情報全体は記憶手段にそのまま記憶させてもよいが、ハッシュ関数を用いる方法等の公知の暗号化方法を適用して暗号化した後に記憶手段に記憶させるようにした方がセキュリティ上好ましい。

【００１５】

また、第１の発明に係る判断手段は、任意の端末装置より受信したパケットから抽出手段によって抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体を、任意の端末装置を操作しているユーザのユーザ識別情報と対応付けて記憶手段に記憶されているアクセス元ＩＰアドレス及びユーザエージェント情報全体と照合し、記憶手段に記憶されているアクセス元ＩＰアドレス及びユーザエージェント情報全体と対応しているか否かを各々判定することで、任意の端末装置を操作しているユーザが正当なユーザか否かを判断する。

【００１６】

前述のように、個々の端末装置から送信されるユーザエージェント情報はおよそ一定とみなすことができる。アプリケーション層のプロトコルとしてＨＴＴＰが適用された場合、端末装置より受信したパケットのＨＴＴＰヘッダには必ずユーザエージェント情報が設定されているので、ユーザエージェント情報全体を利用したユーザ（端末装置）の確認は、電話交換機を介してネットワークに接続された端末装置以外には適用できない特許文献１に記載の技術よりも汎用性が高く、アクセスの都度変化する可能性があるＩＰアドレスのみを用いる技術よりも確認の精度が高く、端末装置に電子証明書をインストールする等の煩雑な作業も不要である。また、ユーザエージェント情報全体を照合することで、例えば、ユーザエージェント情報として所望の文字列が送信されるようにユーザによってユーザエージェント情報が変更設定された等のように、ユーザエージェント情報のフォーマットや内容が事前に変更設定されていたとしても、これを検知することなく、任意の端末装置を操作しているユーザが正当なユーザか否かを判断することができる。

【００１７】

また、個々の端末装置に割り当てされるＩＰアドレスはアクセスの都度相違する可能性があるものの、個々のプロバイダが端末への割り当て用に保有しているＩＰアドレス（グローバルＩＰアドレス）は一定の範囲内でかつ個々のプロバイダ毎に相違しており、個々の端末装置は各々一定のプロバイダを経由してアクセスするので、個々の端末装置がアクセスの都度割り当てされるＩＰアドレスは常に同一ではないものの、例えば上位数ビットは常に一定等のように一致度が高い。

【００１８】

上記に基づき第１の発明では、端末装置より受信したパケットからユーザエージェント情報全体に及びアクセス元ＩＰアドレスを各々抽出し、抽出したアクセス元ＩＰアドレス及びユーザエージェント情報全体をユーザ識別情報と対応付けて記憶手段に各々記憶させておき、任意の端末装置より受信したパケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体が、任意の端末装置を操作しているユーザのユーザ識別情報全体と対応付けて記憶手段に記憶されているアクセス元ＩＰアドレス及びユーザエージェント情報全体と対応しているか否かを各々判定することで、任意の端末装置を操作しているユーザが正当なユーザか否かを判断している。更に、判断手段は、受信したパケットから抽出されたアクセス元ＩＰアドレスについては、記憶手段に記憶されているアクセス元ＩＰアドレスとの所定ビット単位の一致率が閾値以上か否かを判定することで、受信したパケットから抽出されたアクセス元ＩＰアドレスが記憶手段に記憶されているアクセス元ＩＰアドレスと対応しているか否かを判定し、受信したパケットから抽出されたユーザエージェント情報全体については、記憶手段に記憶されているユーザエージェント情報全体と同一か否かを判定することで、受信したパケットから抽出されたユーザエージェント情報全体が記憶手段に記憶されているユーザエージェント情報全体と対応しているか否かを判定するように構成されている。これにより、受信したパケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体が、記憶手段に記憶されているアクセス元ＩＰアドレス及びユーザエージェント情報全体と対応しているか否かを正確に判定することができ、今回パケットを受信した端末装置が、同一のユーザによって過去に使用された端末装置か否かに基づいて、今回パケットを受信した端末装置を操作しているユーザが正当なユーザか否かを判断することができ、ユーザの利便性を損なうことなくユーザ確認の精度を向上させることができる。

【００１９】

また、第２の発明は、第１の発明において、個々のユーザが各々不定の端末装置からアクセスすることを許容するために、情報管理手段は、受信したパケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体が記憶手段に記憶されているアクセス元ＩＰアドレス及びユーザエージェント情報全体と照合された結果、判断手段により、受信したパケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体が記憶手段に記憶されているアクセス元ＩＰアドレス及びユーザエージェント情報全体と対応していないと判定された場合に、受信したパケットから抽出されたアクセス元Ｉ

Ｐアドレス及びユーザエージェント情報全体をユーザ識別情報と対応付けて記憶手段に追加記憶させ、判断手段は、任意の端末装置を操作しているユーザのユーザ識別情報と対応付けられたアクセス元ＩＰアドレス及びユーザエージェント情報全体が記憶手段に複数組記憶されている場合、任意の端末装置より受信したパケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体を、複数組記憶されているアクセス元ＩＰアドレス及びユーザエージェント情報全体と各々照合することで、任意の端末装置を操作しているユーザが正当なユーザか否かを判断することを特徴としている。

【００２０】

第２の発明では、個々のユーザが過去に使用していない新たな端末装置を介してアクセスしてきた場合、判断手段により、受信したパケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体が、記憶手段に記憶されているアクセス元ＩＰアドレス及びユーザエージェント情報全体と判定され、正当なユーザでないと判断されることになるが、この場合、受信したパケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体が、情報管理手段によってユーザ識別情報と対応付けて記憶手段に追加記憶される。そして判断手段は、端末装置を操作しているユーザのユーザ識別情報と対応付けられたアクセス元ＩＰアドレス及びユーザエージェント情報全体が記憶手段に複数組記憶されている場合に、任意の端末装置より受信したパケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体を、複数組記憶されているアクセス元ＩＰアドレス及びユーザエージェント情報全体と各々照合することで、任意の端末装置を操作しているユーザが正当なユーザか否かを判断するので、上記の新たな端末装置を介しての次回以降のアクセスでは正当なユーザと判断されることになる。

【００２１】

このように、第２の発明では、個々のユーザが、例えば自宅に設置された端末装置や職場に設置された端末装置等の複数の端末装置のうちの所望の端末装置を用いてアクセスすることも可能となる。なお、個々のユーザが各々不定の端末装置からアクセスすることを許容した場合であっても、個々のユーザが使用する端末装置の数は限られていることが殆どであるので、毎回新たな端末装置を介してアクセスが行われることで、正当なユーザでないと毎回判断されることは極めて稀である。

【００２２】

なお、第２の発明において、受信したパケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体が記憶手段に記憶されているアクセス元ＩＰアドレス及びユーザエージェント情報全体と対応していないと判定された場合、情報管理手段は、パケット送信元の端末装置を操作しているユーザが、判断手段と異なる方法によって正当なユーザであることが確認されたときにのみ、アクセス元ＩＰアドレス及びユーザエージェント情報全体を記憶手段に追加記憶させるようにしてもよい。

【００２３】

また、第２の発明において、判断手段は、例えば第３の発明として記載したように、任意の端末装置を操作しているユーザのユーザ識別情報と対応付けられたアクセス元ＩＰアドレス及びユーザエージェント情報全体が記憶手段に複数組記憶されている場合、受信したパケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体が、記憶手段に記憶されている複数組のアクセス元ＩＰアドレス及びユーザエージェント情報全体のうちの少なくとも１組のアクセス元ＩＰアドレス及びユーザエージェント情報全体と各々対応していると判定した場合に、任意の端末装置を操作しているユーザが正当なユーザであると判断するように構成することができる。これにより、正当なユーザが複数台の端末装置を選択的に用いてアクセスを行う等の場合にも、正当なユーザを精度良く判断することができる。

【００２４】

また、第２の発明において、判断手段は、例えば第４の発明として記載したように、任意の端末装置を操作しているユーザのユーザ識別情報と対応付けられたアクセス元ＩＰアドレス及びユーザエージェント情報全体が記憶手段に複数組記憶されている場合、複数組

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のアクセス元ＩＰアドレス及びユーザエージェント情報全体の中に、受信したパケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体と各々対応していると判定したアクセス元ＩＰアドレス及びユーザエージェント情報全体の組が存在していなかった場合に、任意の端末装置を操作しているユーザが正当なユーザでないと判断するように構成することができる。これにより、正当なユーザでない第三者がアクセスしてきた場合にも、過去のアクセスと比較してアクセス元ＩＰアドレス及びユーザエージェント情報全体の少なくとも一方が各々異なることに基づいて正当なユーザでないと判断することができ、正当なユーザでない第三者を精度良く判断することができる。

【００２５】

なお、第４の発明において、パケット送信元の端末装置を操作しているユーザが正当なユーザであっても、例えば多数台の端末装置の中から毎回異なる端末装置を用いてアクセスしている場合や、一定の端末装置を用いてアクセスしているものの、アクセスに用いている端末装置がノート型ＰＣ等の携帯型の端末装置であり、毎回異なるホットスポット（HOTSPOT：公衆無線ＬＡＮを利用可能な場所）を利用してアクセスしている場合等のように、利用環境が特殊である場合には、記憶手段に記憶されている複数組のアクセス元ＩＰアドレス及びユーザエージェント情報全体の中に、受信したパケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体と各々対応していると判定したアクセス元ＩＰアドレス及びユーザエージェント情報全体の組が存在していないことで、正当なユーザでないと判断されるという不都合が生ずる。

【００２６】

上記を考慮すると、第４の発明において、例えば第５の発明として記載したように、情報管理手段は、判断手段によって正当なユーザでないと判断されたユーザが、判断手段によるユーザ確認と異なる確認方法によって正当なユーザであると判断されたことが通知された場合、所定の識別情報をユーザのユーザ識別情報と対応付けて記憶手段に各々記憶させ、判断手段は、任意の端末装置を操作しているユーザのユーザ識別情報と対応付けられて記憶手段に所定の識別情報が記憶されており、かつ、複数組のアクセス元ＩＰアドレス及びユーザエージェント情報全体の中に、受信したパケットから抽出されたアクセス元ＩＰアドレスと対応していると判定したアクセス元ＩＰアドレス及びユーザエージェント情報全体の組が複数存在しているか、又は、受信したパケットから抽出されたユーザエージェント情報全体と対応していると判定したアクセス元ＩＰアドレス及びユーザエージェント情報全体の組が複数存在している場合に、任意の端末装置を操作しているユーザが正当なユーザであると判断するように構成することが好ましい。

【００２７】

第５の発明では、判断手段によって正当なユーザでないと判断されたユーザが、判断手段によるユーザ確認と異なる確認方法によって正当なユーザであると判断されたことが通知された場合、当該ユーザの利用環境が特殊であるとみなして、所定の識別情報をユーザのユーザ識別情報と対応付けて記憶手段に各々記憶させる。そして、記憶手段に所定の識別情報が記憶されているユーザについては、複数組のアクセス元ＩＰアドレス及びユーザエージェント情報の中に、受信したパケットから抽出されたアクセス元ＩＰアドレスと対応していると判定したアクセス元ＩＰアドレス及びユーザエージェント情報全体の組が複数存在しているか、又は、受信したパケットから抽出されたユーザエージェント情報全体と対応していると判定したアクセス元ＩＰアドレス及びユーザエージェント情報全体の組が複数存在している場合に、任意の端末装置を操作しているユーザが正当なユーザであると判断している。

【００２８】

これにより、例えば正当なユーザが多数台の端末装置の中から毎回異なる端末装置を用いてアクセスしている等の場合には、記憶されている複数組のアクセス元ＩＰアドレス及びユーザエージェント情報全体の中に、受信したパケットから抽出されたアクセス元ＩＰアドレスと対応していると判定したアクセス元ＩＰアドレス及びユーザエージェント情報全体の組が複数存在していることに基づいて、正当なユーザであると判断することができ

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る。また、正当なユーザが携帯型の端末装置を用い、毎回異なるホットスポットを利用してアクセスしている等の場合には、記憶されている複数組のアクセス元ＩＰアドレス及びユーザエージェント情報全体の中に、受信したパケットから抽出されたユーザエージェント情報全体と対応していると判定したアクセス元ＩＰアドレス及びユーザエージェント情報全体の組が複数存在していることに基づいて、正当なユーザであると判断することができる。従って、第５の発明によれば、ユーザの利用環境が特殊である場合にもユーザ確認を精度良く行うことができる。

【００２９】

また、第１の発明において、例えば第６の発明として記載したように、個々のユーザが使用している電子メールアドレスを個々のユーザのユーザ識別情報と対応付けて各々記憶する電子メールアドレス記憶手段と、判断手段により、任意の端末装置を操作しているユーザが正当なユーザでないと判断された場合に、判断手段と異なる方法によって前記ユーザが正当なユーザか否かを確認するための所定のウェブページへのリンクが付加された電子メールを、前記ユーザのユーザ識別情報と対応付けて電子メールアドレス記憶手段に記憶されている電子メールアドレスへ送信する送信手段と、を更に設けることが好ましい。これにより、判断手段によって正当なユーザでないと判断されたユーザが、判断手段と異なる方法によって正当なユーザか否かの確認を受けるための操作が簡単になり、正当なユーザでないと判断されたユーザの負担を軽減することができる。

【００３０】

また、第２の発明において、情報管理手段を、例えば第７の発明として記載したように、受信したパケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体が記憶手段に複数組記憶されているアクセス元ＩＰアドレス及びユーザエージェント情報全体と各々照合された結果、判断手段により、受信したパケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体が記憶手段に複数組記憶されているアクセス元ＩＰアドレス及びユーザエージェント情報全体の何れとも対応していないと判定され、かつ、任意の端末装置を操作しているユーザのユーザ識別情報と対応付けて記憶手段に記憶されているアクセス元ＩＰアドレス及びユーザエージェント情報全体の組の数が所定の上限値に達している場合に、前記受信したパケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体を、記憶手段に記憶されている複数組のアクセス元ＩＰアドレス及びユーザエージェント情報全体のうち、記憶手段へ記憶させた時期が最も古いアクセス元ＩＰアドレス及びユーザエージェント情報全体の組に上書きして記憶手段に記憶させるように構成してもよい。

【００３１】

これにより、個々のユーザについて、アクセス元ＩＰアドレス及びユーザエージェント情報全体の組が上限値を越えて記憶手段に記憶されることが防止され、記憶手段の記憶容量を節減できると共に、判断手段が、受信したパケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体と照合するアクセス元ＩＰアドレス及びユーザエージェント情報全体の組の数も上限値以下になるので、判断手段に多大な負荷が加わることも防止することができる。

【００３２】

なお、第７の発明において、判断手段により、受信したパケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体が記憶手段に複数組記憶されているアクセス元ＩＰアドレス及びユーザエージェント情報全体の何れとも対応していないと判定され、かつ、任意の端末装置を操作しているユーザのユーザ識別情報と対応付けて記憶手段に記憶されているアクセス元ＩＰアドレス及びユーザエージェント情報全体の組の数が所定の上限値に達している場合、情報管理手段は、パケット送信元の端末装置を操作しているユーザが、判断手段と異なる方法によって正当なユーザであることが確認されたときにのみ、受信したパケットから抽出された新たなアクセス元ＩＰアドレス及びユーザエージェント情報全体を記憶手段に上書き記憶させるようにしてもよい。

【００３３】

一方、第７の発明において、判断手段により、受信したパケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体が記憶手段に複数組記憶されているアクセス元ＩＰアドレス及びユーザエージェント情報全体の何れとも対応していないと判定され、かつ、任意の端末装置を操作しているユーザのユーザ識別情報と対応付けて記憶手段に記憶されているアクセス元ＩＰアドレス及びユーザエージェント情報全体の組の数が所定の上限値に達している場合に、情報管理手段が、新たなアクセス元ＩＰアドレス及びユーザエージェント情報全体を無条件に（前述のように、判断手段と異なる方法によって正当なユーザであることが確認されたか否かに拘わらず）上書き記憶させた場合、新たなアクセス元ＩＰアドレス及びユーザエージェント情報全体が不正アクセスに対応する情報であったときには、正当なユーザに対応する情報が上書きされて消去される可能性があるが、この場合、正当なユーザからのアクセスで「正当なユーザでない」と判断されることで、不正アクセスがあったことを検知できるという効果が得られる。

【００３４】

また、第２の発明において、情報管理手段は、例えば第８の発明として記載したように、受信したパケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体が記憶手段に複数組記憶されているアクセス元ＩＰアドレス及びユーザエージェント情報全体と各々照合された結果、判断手段により、受信したパケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体が記憶手段に複数組記憶されているアクセス元ＩＰアドレス及びユーザエージェント情報全体のうちアクセス元ＩＰアドレス及びユーザエージェント情報全体の特定の組に対応していると判定された場合に、受信したパケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体のうちの少なくともユーザエージェント情報全体を、アクセス元ＩＰアドレス及びユーザエージェント情報全体の特定の組に上書きして記憶手段に記憶させることが好ましい。

【００３５】

前述のように、ユーザエージェント情報は、ブラウザ等のアプリケーションのデフォルトの設定が用いられている場合は、ＯＳやブラウザに新たなパッチが当てられたりバージョンアップや入れ替えが行われた場合に内容が変更され、所望の文字列がユーザエージェント情報として送信されるようにユーザによって設定されている場合は、ユーザエージェント情報として送信する文字列を変更する操作がユーザによって行われると内容が変更されるが、内容が一旦変更された後は当分の間内容は変更されない。このため、上記のように、受信したパケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体のうちの少なくともユーザエージェント情報全体を、対応していると判断されたアクセス元ＩＰアドレス及びユーザエージェント情報全体の特定の組に上書きして記憶手段に記憶させることで、少なくともユーザエージェント情報全体については最新の情報が記憶手段に記憶されることになり、以降のユーザ確認の精度を向上させることができる。なお、第８の発明において、受信したパケットから抽出されたアクセス元ＩＰアドレスについても、ユーザエージェント情報全体と共に上書きして記憶させるようにしてもよいことは言うまでもない。

【００３６】

第９の発明に係るユーザ確認方法は、抽出手段が、インターネット層のプロトコルとしてＩＰが適用され、アプリケーション層のプロトコルとしてＨＴＴＰが適用されて端末装置より受信したパケットから、当該パケットのＨＴＴＰヘッダに設定されているユーザエージェント情報全体を抽出すると共に、前記パケットからアクセス元ＩＰアドレスを抽出し、情報管理手段が、個々のユーザが操作する端末装置より受信したパケットから前記抽出手段によって各々抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体を、前記個々のユーザのユーザ識別情報と対応付けて記憶手段に各々記憶させ、判断手段が、任意の端末装置より受信したパケットから前記抽出手段によって抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体を、前記任意の端末装置を操作しているユーザのユーザ識別情報と対応付けて前記記憶手段に記憶されているアクセス元ＩＰアドレス及びユーザエージェント情報全体と照合し、前記記憶手段に記憶されているアクセス

元ＩＰアドレス及びユーザエージェント情報全体と対応しているか否かを各々判定することで、前記任意の端末装置を操作しているユーザが正当なユーザか否かを判断すると共に、前記判断手段が、前記受信したパケットから抽出されたアクセス元ＩＰアドレスについては、前記記憶手段に記憶されているアクセス元ＩＰアドレスとの所定ビット単位の一致率が閾値以上か否かを判定することで、前記受信したパケットから抽出されたアクセス元ＩＰアドレスが前記記憶手段に記憶されているアクセス元ＩＰアドレスと対応しているか否かを判定し、前記受信したパケットから抽出されたユーザエージェント情報全体については、前記記憶手段に記憶されているユーザエージェント情報全体と同一か否かを判定することで、前記受信したパケットから抽出されたユーザエージェント情報全体が前記記憶手段に記憶されているユーザエージェント情報と対応しているか否かを判定することを特徴としているので、第１の発明と同様に、ユーザの利便性を損なうことなくユーザ確認の精度を向上させることができる。

【００３７】

第１０の発明に係るユーザ確認プログラムは、記憶手段を備えたコンピュータを、インターネット層のプロトコルとしてＩＰが適用され、アプリケーション層のプロトコルとしてＨＴＴＰが適用されて端末装置より受信したパケットから、当該パケットのＨＴＴＰヘッダに設定されているユーザエージェント情報全体を抽出すると共に、前記パケットからアクセス元ＩＰアドレスを抽出する抽出手段、個々のユーザが操作する端末装置より受信したパケットから前記抽出手段によって各々抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体を、前記個々のユーザのユーザ識別情報と対応付けて記憶手段に各々記憶させる情報管理手段、及び、任意の端末装置より受信したパケットから前記抽出手段によって抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報全体を、前記任意の端末装置を操作しているユーザのユーザ識別情報と対応付けて前記記憶手段に記憶されているアクセス元ＩＰアドレス及びユーザエージェント情報全体と照合し、前記記憶手段に記憶されているアクセス元ＩＰアドレス及びユーザエージェント情報全体と対応しているか否かを各々判定することで、前記任意の端末装置を操作しているユーザが正当なユーザか否かを判断する判断手段として機能させ、前記判断手段は、前記受信したパケットから抽出されたアクセス元ＩＰアドレスについては、前記記憶手段に記憶されているアクセス元ＩＰアドレスとの所定ビット単位の一致率が閾値以上か否かを判定することで、前記受信したパケットから抽出されたアクセス元ＩＰアドレスが前記記憶手段に記憶されているアクセス元ＩＰアドレスと対応しているか否かを判定し、前記受信したパケットから抽出されたユーザエージェント情報全体については、前記記憶手段に記憶されているユーザエージェント情報全体と同一か否かを判定することで、前記受信したパケットから抽出されたユーザエージェント情報全体が前記記憶手段に記憶されているユーザエージェント情報と対応しているか否かを判定することを特徴としている。

【００３８】

第１０の発明に係るユーザ確認プログラムは、記憶手段を備えたコンピュータを、上記の抽出手段、情報管理手段及び判断手段として機能させるためのプログラムであるので、コンピュータが第１０の発明に係るユーザ確認プログラムを実行することで、前記コンピュータが第１の発明のユーザ確認装置として機能することになり、第１の発明と同様に、ユーザの利便性を損なうことなくユーザ確認の精度を向上させることができる。

【発明の効果】

【００３９】

以上説明したように本発明は、端末装置より受信したパケットからユーザエージェント情報全体及びアクセス元ＩＰアドレスを抽出し、抽出したアクセス元ＩＰアドレス及びユーザエージェント情報全体を個々のユーザのユーザ識別情報と対応付けて記憶手段に各々記憶させ、任意の端末装置より受信したパケットから抽出したアクセス元ＩＰアドレス及びユーザエージェント情報全体を、任意の端末装置を操作しているユーザのユーザ識別情報と対応付けて記憶手段に記憶されているアクセス元ＩＰアドレス及びユーザエージェント情報全体と照合し、記憶手段に記憶されているアクセス元ＩＰアドレス及びユーザエー

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ジェント情報全体と対応しているか否かを各々判定することで、任意の端末装置を操作しているユーザが正当なユーザか否かを判断すると共に、受信したパケットから抽出されたアクセス元ＩＰアドレスについては、記憶手段に記憶されているアクセス元ＩＰアドレスとの所定ビット単位の一致率が閾値以上か否かを判定することで、受信したパケットから抽出されたアクセス元ＩＰアドレスが前記記憶手段に記憶されているアクセス元ＩＰアドレスと対応しているか否かを判定し、受信したパケットから抽出されたユーザエージェント情報全体については、記憶手段に記憶されているユーザエージェント情報全体と同一か否かを判定することで、受信したパケットから抽出されたユーザエージェント情報全体が前記記憶手段に記憶されているユーザエージェント情報全体と対応しているか否かを判定するので、ユーザの利便性を損なうことなくユーザ確認の精度を向上させることができる、という優れた効果を有する。

【図面の簡単な説明】

【００４０】

【図１】本実施形態に係るコンピュータ・システムの概略構成を示すブロック図である。

【図２】クライアント端末からサーバへのＨＴＴＰデータの送信において、各レイヤでのヘッダの付加及び除去を説明する概念図である。

【図３】アプリケーション・サーバによって行われるユーザ認証処理の内容を示すフローチャートである。

【図４】使用履歴情報の内容を示す概略図である。

【図５】使用履歴情報に基づく認証ＯＫ／ＮＧの判定条件を示す図表である。

【図６】再認証要請メールの一例を示すイメージ図である。

【図７】使用履歴テーブル更新処理の内容を示すフローチャートである。

【図８】確認メールの一例を示すイメージ図である。

【発明を実施するための形態】

【００４１】

以下、図面を参照して本発明の実施形態の一例を詳細に説明する。図１には本実施形態に係るコンピュータ・システム１０が示されている。本実施形態に係るコンピュータ・システム１０は、特定金融機関に設置されたウェブサーバ１２を含んで構成されている。ウェブサーバ１２は、ＣＰＵ１２Ａ、ＲＡＭ等から成るメモリ１２Ｂ、ハードディスクドライブ（ＨＤＤ）１２Ｃ、ネットワークインタフェース（Ｉ／Ｆ）部１２Ｄを備えている。ＨＤＤ１２Ｃには認証情報データベース（ＤＢ）及び使用履歴テーブル（何れも詳細は後述）が記憶されており、本発明に係る記憶手段に対応している。また、ＨＤＤ１２ＣにはＣＰＵ１２Ａが後述するユーザ認証処理を行うためのユーザ認証プログラムがインストールされている。なお、ユーザ認証プログラムは第１０の発明のユーザ確認プログラムに対応しており、ＣＰＵ１２Ａがユーザ認証プログラムを実行することで、ウェブサーバ１２は本発明に係るユーザ確認装置として機能する。

【００４２】

また、ウェブサーバ１２のネットワークＩ／Ｆ部１２Ｄは、多数台のウェブサーバが通信回線を介して相互に接続されて成るコンピュータ・ネットワーク（インターネット）１６に直接接続されており、更に特定金融機関内に設置されたイントラネット（ＬＡＮ）２６にも接続されている。イントラネット２６には勘定系システム２８が接続されている。インターネット１６には、各々ＰＣ等から成る多数台のクライアント端末１８が接続されている。個々のクライアント端末１８にはブラウザがインストールされており、本発明に係る端末装置に対応している。なお、個々のクライアント端末１８のインターネット１６への接続形態は、符号「１８Ａ」を付したクライアント端末のように、インターネット１６に直接接続される（詳しくは図示しないプロバイダを介して接続される）場合もあれば、符号「１８Ｂ」を付したクライアント端末のように、企業内に設置されプロクシサーバ２２を介してインターネット１６に接続される場合もある。

【００４３】

次に本実施形態の作用を説明する。本実施形態に係る特定金融機関は、特定金融機関に

口座を開設しているユーザがオンラインで金融取引を行うことを可能とするサービスとして、ウェブサーバ１２によって運営されるオンライン金融取引用ウェブサイトを利用してユーザからのオンラインでの金融取引の実行指示を受け付けるオンライン金融取引受付サービスを提供している。このオンライン金融取引受付サービスを利用した金融取引では、ユーザがクライアント端末１８を介してオンライン金融取引用ウェブサイトのウェブページを閲覧し、該ウェブページ上で必要な情報を入力することで、ユーザが所望している金融取引の実行を指示するための情報（金融取引指示情報）がクライアント端末１８からウェブサーバ１２へ送信される。そして、この金融取引指示情報がウェブサーバ１２からイントラネット２６に接続された勘定系システム２８等へ転送されることで、金融取引指示情報に基づいてユーザから指示された金融取引が勘定系システム２８等によって実行されるようになっている。

【００４４】

オンライン金融取引受付サービスを利用するユーザは、事前に前記サービスの利用を特定金融機関へ申請する。特定金融機関は、ユーザから前記サービスの利用が申請される毎に前記ユーザへユーザＩＤ（本発明に係るユーザ識別情報に相当）を付与し、付与したユーザＩＤを、ユーザが設定したパスワード（本発明に係る認証情報に相当）及びユーザから通知された電子メールアドレス（ユーザが使用している電子メールアドレス）と共に、ウェブサーバ１２のＨＤＤ１２Ｃに記憶されている認証情報ＤＢに登録する。このように、ＨＤＤ１２Ｃは第６の発明の電子メールアドレス記憶手段に対応している。

【００４５】

次に、ユーザがクライアント端末１８を介してオンライン金融取引用ウェブサイトへのアクセスを指示した際に、クライアント端末１８からウェブサーバ１２へ送信されるパケットについて説明する。なお、インターネット１６経由でのクライアント端末１８とウェブサーバ１２との間の通信では、インターネット層のプロトコルとしてＩＰが適用され、トランスポート層のプロトコルとしてＴＣＰ（Transmission Control Protocol）が適用され、アプリケーション層のプロトコルとしてＨＴＴＰが適用される。オンライン金融取引用ウェブサイトへのアクセスの指示は、クライアント端末１８上でブラウザが起動されている状態で、ユーザがクライアント端末１８の入力装置を操作してオンライン金融取引用ウェブサイトのＵＲＬ(Uniform Resource Locator)を指定する等の操作を行うことによって為される。

【００４６】

オンライン金融取引用ウェブサイトへのアクセスが指示されると、アプリケーション層に対応する処理を行うアプリケーション・プログラムであるブラウザは、指定されたＵＲＬに対応するウェブページの配信をウェブサーバ１２に要求するために必要な情報を設定したＨＴＴＰデータを生成すると共に、当該ＨＴＴＰデータの先頭に、アプリケーション層に対応する情報を設定したＨＴＴＰヘッダを付加する（図２参照）。なお、クライアント端末１８からウェブサーバ１２へ後述する認証要求パケットが送信される場合、ＨＴＴＰデータには、ユーザがクライアント端末１８を介して入力したユーザＩＤやパスワードを含む情報が設定される。また、ＨＴＴＰヘッダに設定される情報にはユーザエージェント情報が含まれており、ブラウザのデフォルトの設定では、このユーザエージェント情報として、クライアント端末１８上で動作しているＯＳやブラウザ自身のバージョン、パッチがどこまで当たっているか等を表す情報が設定される。また、ユーザエージェント情報として任意の文字列を固定的に設定するようにブラウザの設定を変更することも可能であり、このような設定変更が行われていた場合、事前に指定された文字列がユーザエージェント情報として設定される。

【００４７】

また、クライアント端末１８上では、トランスポート層、インターネット層及びネットワークインタフェース層の各レイヤに対応する処理を行う処理モジュールも各々動作しており、図２に示すように、ブラウザによって生成された情報（ＨＴＴＰヘッダを付加したＨＴＴＰデータ）は上位レイヤの処理モジュールから下位レイヤの処理モジュールへ順に

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引き渡され、各レイヤの処理モジュールは各レイヤに対応する処理を行うと共に、引き渡された情報の先頭に、各レイヤに対応する情報を設定したヘッダを付加する処理を順次行う。これにより、クライアント端末１８からは、ネットワークインタフェース層に対応するネットワークヘッダ、インターネット層に対応するＩＰヘッダ、トランスポート層に対応するＴＣＰヘッダ及びアプリケーション層に対応するＨＴＴＰヘッダが各々付加されたＨＴＴＰデータがウェブサーバ１２へパケットとして送信される。

【００４８】

なお、ＩＰヘッダには、インターネット層に対応する処理モジュールにより、インターネット層に対応する情報としてパケットの宛先を示す宛先ＩＰアドレスや送信元ＩＰアドレス（クライアント端末１８に付与されたＩＰアドレス）等の情報が設定され、ＴＣＰヘッダには、トランスポート層に対応する処理モジュールにより、トランスポート層に対応する情報としてＴＣＰポート番号等の情報が設定される。

【００４９】

また、ウェブサーバ１２上でも各レイヤの処理モジュールが各々動作しており、クライアント端末１８からのパケットは下位レイヤの処理モジュールから上位レイヤの処理モジュールへ順に引き渡され、各レイヤの処理モジュールは、引き渡されたパケットの先頭に付加されている各レイヤに対応するヘッダを参照し、当該ヘッダに設定されている情報に基づいて各レイヤに対応する処理を行った後に前記ヘッダを除去する処理を順次行う。これにより、ウェブサーバ１２上で動作するアプリケーション層の処理モジュール（この処理モジュールには、後述するユーザ認証処理を行う処理モジュールも含まれる）には、先頭にＨＴＴＰヘッダのみが付加されたＨＴＴＰデータが引き渡される。

【００５０】

なお、後述するユーザ認証処理では、ウェブサーバ１２がクライアント端末１８から受信したパケットのＩＰヘッダに設定されている送信元ＩＰアドレス（アクセス元ＩＰアドレス）を用いて処理を行うが、ユーザ認証処理を行う処理モジュールがパケットを受け取る時点では既にＩＰヘッダが除去されているので、そのままでは送信元ＩＰアドレスを検知できない。このため、ウェブサーバ１２上で動作するインターネット層の処理モジュールは、クライアント端末１８から受信したパケットのＩＰヘッダに設定されている送信元ＩＰアドレスをＨＴＴＰデータに付加する等の処理を行うことで、アプリケーション層の処理モジュール（ユーザ認証処理を行う処理モジュール）へ送信元ＩＰアドレスを伝達する。

【００５１】

ウェブサーバ１２では、インターネット１６経由でクライアント端末１８から何らかのパケットを受信した場合、ウェブサーバ１２上で動作する所定の処理モジュール（この処理モジュールもアプリケーション層に対応する処理モジュールである）により、ＨＴＴＰデータに所定の情報が設定されているか否か等に基づいて、クライアント端末１８から受信したパケットが認証要求パケットか否かが判定される。

【００５２】

オンライン金融取引用ウェブサイトは、リンクによって互いに関連付けられた多数のウェブページの集合体であり、上記ウェブサイトのホームページからリンクを辿っていくことで、ユーザが実行を所望している金融取引の条件を指定して実行を指示することが可能な金融取引実行指示ページが表示されるが、オンライン金融取引用ウェブサイトのホームページには、ユーザＩＤやパスワードを入力するための入力欄が設けられており、ユーザに対してログイン操作（ユーザＩＤやパスワードの入力）を促すメッセージも表示されている。そして、ユーザがホームページの対応する入力欄にユーザＩＤ及びパスワードを入力して送信を指示すると、ユーザが操作しているクライアント端末１８からＨＴＴＰデータに所定の情報が設定された認証要求パケットが送信される。

【００５３】

所定の処理モジュールは、クライアント端末１８から受信したパケットが認証要求パケットでないと判定した場合、受信したパケットに応じた処理、例えばオンライン金融取引

用ウェブサイトのホームページのデータを要求元のクライアント端末１８へ配信するためのＨＴＴＰデータを生成し、生成したＨＴＴＰデータにＨＴＴＰヘッダを付加する等の処理を行う。このＨＴＴＰデータ及びＨＴＴＰヘッダは、図２に示すプロセスと逆のプロセスを経てクライアント端末１８へパケットとして送信される。これにより、クライアント端末１８のディスプレイには、クライアント端末１８を介してユーザが配信を要求したウェブページが表示される。

【００５４】

一方、クライアント端末１８から受信したパケットが認証要求パケットであると判定した場合、所定の処理モジュールはユーザ認証処理を行う処理モジュールを起動する。これにより、ＣＰＵ１２Ａによってユーザ認証プログラムが実行され、図３に示すユーザ認証処理が行われる。

【００５５】

このユーザ認証処理では、まずステップ３０において、受信した認証要求パケットのＨＴＴＰデータからユーザＩＤ及びパスワードを抽出し、次のステップ３２において、ステップ３０で抽出したユーザＩＤとパスワードの組合わせが認証情報ＤＢに登録されているか否を検索する認証処理を行う。ステップ３４では、ステップ３２の検索によってユーザＩＤとパスワードの組合わせが認証情報ＤＢから抽出されたか否かに基づいて、ステップ３２の認証処理で認証に成功したか否か判定する。判定が否定された場合はステップ７４へ移行し、起動元の所定の処理モジュールへ認証失敗を通知してユーザ認証処理を終了する。この場合、所定の処理モジュールにより、認証要求パケット送信元のクライアント端末１８のディスプレイに、入力されたユーザＩＤ又はパスワードが誤っている旨を通知するメッセージを表示させる等のエラー処理が行われる。

【００５６】

一方、ステップ３２の認証処理で認証に成功した場合には、ステップ３４の判定が肯定されてステップ３６へ移行し、受信した認証要求パケットのＨＴＴＰデータからアクセス元ＩＰアドレス（送信元ＩＰアドレス）を抽出すると共に、認証要求パケットのＨＴＴＰヘッダからユーザエージェント情報を抽出する。なお、このステップ３６は本発明に係る抽出手段に対応している。また、次のステップ３８では、ＨＤＤ１２Ｃに記憶されている使用履歴テーブルから、先のステップ３０で抽出されたユーザＩＤに対応する使用履歴情報を抽出し、抽出した使用履歴情報をメモリ１２Ｂに記憶させる。

【００５７】

本実施形態に係る使用履歴テーブルは、オンライン金融取引受付サービスの利用を事前に申請しユーザＩＤが付与されている個々のユーザ（正当なユーザ）について、図４に示すような使用履歴情報を記憶するための領域が各々設けられて構成されており、個々のユーザに対応する使用履歴情報記憶領域には、顧客ＩＤ、取引停止フラグ、特殊環境フラグ、照合判定用閾値、インデックスの各情報を設定／登録するための領域が設けられ、更にアクセス元ＩＰアドレス及びユーザエージェント情報を２組登録可能な領域が設けられている。

【００５８】

顧客ＩＤ領域には顧客マスタに登録されている口座番号からハッシュ関数を用いて生成された顧客ＩＤが事前に登録される。また、取引停止フラグは通常ルートでの認証（アクセス元ＩＰアドレス及びユーザエージェント情報に基づく認証）を停止するか否かを表すフラグであり、取引停止フラグ領域には当初、取引停止フラグの初期値である０（通常ルートでの認証有効を意味する）が設定される。また、特殊環境フラグはユーザの利用環境が特殊か否かを表すフラグであり、特殊環境フラグ領域には当初、特殊環境フラグの初期値である０（通常環境を意味する）が設定される。またインデックスidは、使用履歴情報として登録された２組のアクセス元ＩＰアドレス及びユーザエージェント情報(IP0,UA0及びIP1,UA1)のうちの何れが最新かを表す情報であり、インデックス領域には当初、初期値０(IP0,UA0が最新であることを表す)が設定される。また、個々のアクセス元ＩＰアドレス領域及びユーザエージェント情報領域には初期値として空白（情報無し）が各々設定さ

れる。

【００５９】

前述のステップ３８では、先のステップ３０で抽出されたユーザＩＤをキーに顧客マスタ（図示省略）を検索することで、前記ユーザＩＤが付与されたユーザが保有している口座の口座番号を抽出し、抽出した口座番号からハッシュ関数を用いて顧客ＩＤを求め、求めた顧客ＩＤをキーにして使用履歴テーブルを検索することで、ユーザＩＤに対応する使用履歴情報を抽出する。次のステップ４０では、抽出した使用履歴情報のうちの取引停止フラグが１か否か判定する。判定が否定された場合はステップ４２へ移行し、抽出した使用履歴情報にアクセス元ＩＰアドレス及びユーザエージェント情報が１組以上登録されているか否か判定する。

【００６０】

前述のように、使用履歴情報領域のうちのアクセス元ＩＰアドレス領域及びユーザエージェント情報領域には初期値として空白が設定されるが、オンライン金融取引受付サービスの利用を申請したユーザによって、オンライン金融取引用ウェブサイトへのアクセスが１回以上行われると、ステップ３６で認証要求パケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報が使用履歴情報として登録される（詳細は後述）。使用履歴情報としてアクセス元ＩＰアドレス及びユーザエージェント情報が既に登録されている場合はステップ４２の判定が肯定されてステップ４４へ移行し、ステップ３６で認証要求パケットから抽出したアクセス元ＩＰアドレス及びユーザエージェント情報を、使用履歴情報として登録されているアクセス元ＩＰアドレス及びユーザエージェント情報と照合する。

【００６１】

なお、ＩＰアドレスの照合は以下のようにして行われる。すなわち、ＩＰアドレスは４バイトのデータであるが、本実施形態では、アクセス元ＩＰアドレス領域へのアクセス元ＩＰアドレスの登録に際し、１バイト毎にハッシュ関数を用いてハッシュ値が演算され、４個のハッシュ値がアクセス元ＩＰアドレスとして登録される。このため、ステップ３６で抽出したアクセス元ＩＰアドレスについても１バイト毎にハッシュ値を演算し、得られた４個のハッシュ値をアクセス元ＩＰアドレス領域に登録されている４個のハッシュ値と比較し、ハッシュ値単位での一致率を求める。そして、求めた一致率を使用履歴情報として設定されている照合判定用閾値と比較し、一致率が閾値以上の場合は、今回のアクセス元ＩＰアドレスが登録されているＩＰアドレスと「対応している」と判定し、一致率が閾値未満の場合は、今回のアクセス元ＩＰアドレスが登録されているＩＰアドレスと「対応していない」と判定する。

【００６２】

図１に示すクライアント端末１８Ａのように、インターネット１６に直接接続される形態において、クライアント端末１８ＡのＩＰアドレス（グローバルＩＰアドレス）は、プロバイダとの契約により予め固定されている場合と、インターネット１６へ接続する度にプロバイダによって不定のＩＰアドレス（プロバイダが割り当て用に事前に確保している一定範囲内のＩＰアドレスのうちの何れか）が割り当てされる場合がある。また、図１に示すクライアント端末１８Ｂのように、企業内に設置されプロクシサーバ２２を介してインターネット１６に接続される接続形態において、例えば前記企業が独自ドメインを取得し、割り当て用に一定範囲内のＩＰアドレスを事前に確保している場合、クライアント端末１８Ｂから送信されたパケットは、ＩＰヘッダに設定されている送信元ＩＰアドレスが、プロクシサーバ２２によって割り当て用に前記企業が事前に確保している一定範囲内のＩＰアドレスのうちの何れかのＩＰアドレスで上書きされた後にインターネット１６へ送出される。

【００６３】

従って、割り当てされるＩＰアドレスが不定のクライアント端末１８であっても、割り当てされるＩＰアドレスは一定の範囲内に収まっている（上位数バイトは同一である）ので、上記のようにＩＰアドレスの一致率が閾値以上か否かに基づいて、ＩＰアドレスが対

応しているか否かを判定することで、オンライン金融取引用ウェブサイトが以前にアクセスされた際と同一のアクセス元（インターネット１６上でのクライアント端末１８の所在）からオンライン金融取引用ウェブサイトがアクセスされた場合に、ＩＰアドレスが対応していると判定することができる。

【００６４】

なお、ユーザエージェント情報については、今回のユーザエージェント情報が登録されているユーザエージェント情報と同一であれば「対応している」と判定し、今回のユーザエージェント情報が登録されているユーザエージェント情報と同一でなければ「対応していない」と判定する。アクセス元ＩＰアドレス及びユーザエージェント情報の照合で上記の判定を行うことは第１の発明に対応している。また、使用履歴情報としてアクセス元ＩＰアドレス及びユーザエージェント情報が２組登録されている場合には、認証要求パケットから抽出したアクセス元ＩＰアドレス及びユーザエージェント情報を、登録されている２組のアクセス元ＩＰアドレス及びユーザエージェント情報と各々照合する。

【００６５】

次のステップ４６では、ステップ４４におけるアクセス元ＩＰアドレス及びユーザエージェント情報の照合結果に基づいて、認証要求パケット送信元のクライアント端末１８を操作しているユーザに対する認証が「成功」「条件付き成功」「失敗」の何れかに該当するかを判定し、判定結果に応じて分岐する。上記判定は図５に示す判定表に従って行われる。なお、図５における「○」はステップ４４の照合で「対応している」と判定された場合に、「×」は「対応していない」と判定された場合に各々対応している。また、図５における「最新」のアクセス元ＩＰアドレス及びユーザエージェント情報は、使用履歴情報として登録されている２組のアクセス元ＩＰアドレス及びユーザエージェント情報のうち、使用履歴情報のインデックスidが指し示しているアクセス元ＩＰアドレス及びユーザエージェント情報を表し、「以前」のアクセス元ＩＰアドレス及びユーザエージェント情報は、他方のアクセス元ＩＰアドレス及びユーザエージェント情報を表している。また、使用履歴情報として１組のアクセス元ＩＰアドレス及びユーザエージェント情報（「最新」の情報）のみが登録されている場合には、「以前」のアクセス元ＩＰアドレス及びユーザエージェント情報との照合結果が何れも「対応していない」と判定されたものとしてステップ４６の判定が行われる。なお、上記のステップ４４，４６は、後述するステップ６４と共に本発明に係る判断手段（詳しくは第１～５の発明の判断手段）に対応している。

【００６６】

先のステップ４４における照合結果が、「認証要求パケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報が、使用履歴情報として登録されている２組のアクセス元ＩＰアドレス及びユーザエージェント情報のうち、少なくとも１組のアクセス元ＩＰアドレス及びユーザエージェント情報と各々対応している」という条件（便宜上、第１の条件と称する）を満たす結果であった場合、今回のアクセスは、同一のユーザが過去にオンライン金融取引用ウェブサイトをアクセスした際と、アクセス元が同一でかつクライアント端末１８も同一とみなすことができるので、認証要求パケット送信元のクライアント端末１８を操作しているユーザも正当なユーザである可能性が極めて高い。このため、ステップ４６では上記場合に、図５に「認証ＯＫ」と表記して示すように認証が「成功」と判定する。

【００６７】

一方、先のステップ４４における照合結果が、「使用履歴情報として登録されているアクセス元ＩＰアドレス及びユーザエージェント情報の組の中に、認証要求パケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報と各々対応していると判定された組が存在していない」という条件（便宜上、第２の条件と称する）を満たす結果であった場合、今回のアクセスは、同一のユーザが過去にオンライン金融取引用ウェブサイトをアクセスした際と、アクセス元及びクライアント端末１８の少なくとも一方が各々相違しているので、認証要求パケット送信元のクライアント端末１８を操作しているユーザは正当なユーザでない可能性が高い。

【００６８】
但し、多数のユーザの中には、例えばオンライン金融取引用ウェブサイトのアクセスに利用可能なクライアント端末１８を多数台保有しており、多数台のクライアント端末１８の中から不定のクライアント端末１８を介してオンライン金融取引用ウェブサイトにアクセスしたり（この場合、各回のアクセスでユーザエージェント情報が互いに相違する可能性が高い）、ノート型ＰＣ等の携帯型のクライアント端末１８を用い、毎回異なるホットスポットを利用してオンライン金融取引用ウェブサイトへアクセスする（この場合、各回のアクセスでアクセス元ＩＰアドレスが大きく相違する可能性が高い）等のように、利用環境が特殊なユーザが存在している可能性があり、この種の利用環境が特殊なユーザも上記第２の条件に該当する。

【００６９】
このため、ステップ４６では、ステップ４４における照合結果が「使用履歴情報として登録されている２組のアクセス元ＩＰアドレス及びユーザエージェント情報の両方が、認証要求パケットから抽出されたアクセス元ＩＰアドレスと対応していると判定されるか、又は、認証要求パケットから抽出されたユーザエージェント情報と対応していると判定された」という条件（便宜上、第３の条件と称する）を満たす結果であった場合に、図５に「条件付き認証ＯＫ」と表記して示すように、認証を「条件付き成功」と判定し、ステップ４４における照合結果が前述の第２の条件を満たしかつ上記の第３の条件を満たさない場合に、図５に「認証ＮＧ」と表記して示すように、認証を「失敗」と判定する。

【００７０】
ステップ４６で認証「成功」と判定された場合はステップ４８へ移行し、使用履歴情報の特殊環境フラグが１か否か判定する。判定が否定された場合はステップ５２へ移行し、起動元の所定の処理モジュールへ認証成功を通知する。この場合、所定の処理モジュールにより、正当なユーザであることが確認されたユーザに対してのみ配信する所定のウェブページを、認証要求パケット送信元のクライアント端末１８へ配信する等の処理が行われる。次のステップ５４では、認証要求パケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報が、使用履歴情報として登録されているアクセス元ＩＰアドレス及びユーザエージェント情報のうち、インデックスidが指し示している「最新」のアクセス元ＩＰアドレス及びユーザエージェント情報に各々対応していると判定されたか否か判定する。

【００７１】
判定が肯定された場合はステップ６０へ移行し、認証要求パケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報を、使用履歴情報として登録されている「最新」のアクセス元ＩＰアドレス及びユーザエージェント情報に上書きして登録し、ステップ６２へ移行する。また、ステップ５４の判定が否定された場合はステップ５６へ移行し、認証要求パケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報を、使用履歴情報として登録されている「以前」のアクセス元ＩＰアドレス及びユーザエージェント情報（インデックスidが指し示していないアクセス元ＩＰアドレス及びユーザエージェント情報）に上書きして登録する（なお、上書きされるアクセス元ＩＰアドレス及びユーザエージェント情報が「空白」の場合、ステップ５６における上書き登録は第２の発明の「追加記憶」に相当する）。また、次のステップ５８ではインデックスidのビットを反転させることで、ステップ５６で上書きして登録したアクセス元ＩＰアドレス及びユーザエージェント情報を「最新」へ変更する。

【００７２】
そしてステップ６２では、メモリ１２Ｂ上に記憶している使用履歴情報を使用履歴テーブルに書き戻すことで、使用履歴テーブル上の使用履歴情報を更新し、ユーザ認証処理を終了する。なお、上記のステップ６０，５６のように、認証要求パケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報を、使用履歴情報として登録されているアクセス元ＩＰアドレス及びユーザエージェント情報に上書きして登録することで、同一ユーザについて再度ユーザ認証処理が行われた際の、ステップ４４の照合及びステッ

プ４６の判定の精度を向上させることができる。なお、上述したステップ５４～ステップ６２は本発明に係る情報管理手段（詳しくは第８の発明の情報管理手段）に対応している。

【００７３】

一方、先のステップ４６で認証が「失敗」と判定された場合はステップ６８へ移行し、使用履歴情報のうちの取引停止フラグに１を設定する。また、ステップ４６で認証が「失敗」と判定された場合にも、認証要求パケット送信元のクライアント端末１８を操作しているユーザが正当なユーザである可能性があり、これを考慮して次のステップ７０では、ステップ３２で抽出したユーザＩＤと対応付けて認証情報ＤＢに記憶されている電子メールアドレスを読み出し、読み出した電子メールアドレスへ再認証要請メールを送信する。例として図６に示すように、この再認証要請メールには、認証要求パケット送信元のクライアント端末１８を操作しているユーザを、通常ルートと異なる認証方法によって正当なユーザか否かを確認するための再認証専用のウェブページへのリンク１００が付加されている。なお、ステップ７０は第６の発明の送信手段に対応している。

【００７４】

次のステップ７２では起動元の所定の処理モジュールへ認証失敗を通知し、ステップ５４へ移行する。これにより、前述のように、認証要求パケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報の使用履歴情報への上書き登録・使用履歴テーブルへの使用履歴情報の書き戻しが行われてユーザ認証処理を終了する。

【００７５】

上記のように、ステップ４６で認証が「失敗」と判定されると取引停止フラグに１が設定されるので、同一ユーザに対してユーザ認証処理が再度実行された場合、ステップ４０の判定が肯定されてステップ７０へ移行することで、通常ルートでの認証（アクセス元ＩＰアドレス及びユーザエージェント情報に基づく認証）は行われず、再認証要請メールが再度送信され（ステップ６８）、起動元の所定の処理モジュールへ認証失敗が再度通知される（ステップ７２）。従って、ステップ４６で認証が「失敗」と判定された前回のユーザ認証処理が、ユーザＩＤ及びパスワードを不正に取得した第三者による不正アクセスによって実行されていた場合、その後、正当なユーザがオンライン金融取引用ウェブサイトにアクセスして認証を受けようとしても認証が「失敗」となってしまうことになるが、その代わりに不正アクセスがあったことを検知することができる。

【００７６】

また、認証要求パケット送信元のクライアント端末１８を操作しているユーザが正当なユーザであるにも拘わらず、前述のようにステップ４６で認証が「失敗」と判定された場合、当該ユーザは先のステップ７０で送信された再認証要請メールを受信し、受信した再認証要請メールに付加されているリンク１００から再認証専用のウェブページにアクセスする操作を行い、クライアント端末１８のディスプレイに表示された再認証専用のウェブページを介して所定の再認証手続きを受ける。この再認証手続きで正当なユーザであることが確認された場合、ユーザ認証処理を行う処理モジュールへ再認証成功が通知される。なお、再認証専用のウェブページにアクセスするためには、再認証要請メールを受信できる環境を有している必要があり、再認証専用のウェブページにアクセスして再認証手続きを受ける人は、その時点で正当なユーザである可能性が非常に高いとみなすことができるので、再認証手続きを比較的簡素な手続きとすることでユーザの負担を軽減することが可能である。

【００７７】

一方、ユーザ認証処理を行う処理モジュールは、再認証成功が通知されると、図７に示す使用履歴テーブル更新処理を行う。すなわち、上記の再認証通知には、再認証手続きによって正当なユーザであることが確認されたユーザのユーザＩＤが情報として付加されており、まずステップ８０では、正当なユーザであることが確認されたユーザのユーザＩＤを抽出・取得する。次のステップ８２では、ステップ８０で取得したユーザＩＤに対応する使用履歴情報を使用履歴テーブルから抽出し、抽出した使用履歴情報をメモリ１２Ｂに

記憶させる。またステップ８４では、抽出した使用履歴情報のうち、取引停止フラグを０に戻すと共に、特殊環境フラグに１を設定する。そして、次のステップ８６で使用履歴情報を使用履歴テーブルへ書き戻し、使用履歴テーブル更新処理を終了する。上記のように取引停止フラグを０に戻すことで、同一ユーザに対してユーザ認証処理が再度実行された場合に、ステップ４０の判定が否定されることで通常ルートでの認証が再開されることになる。なお、ステップ８４は第５の発明の情報管理手段に対応している。

【００７８】

また、先のステップ４６で認証が「条件付き成功」と判定された場合はステップ６４へ移行し、使用履歴情報のうちの特殊環境フラグが１か否か設定する。認証が「条件付き成功」の場合、先に説明したように、認証要求パケット送信元のクライアント端末１８を操作しているユーザは利用環境が特殊なユーザである可能性が高いが、第三者による不正アクセスである可能性も否定できない。このため、本実施形態における「条件付き成功」は、前述の再認証手続きで認証に成功していることを認証成功の条件としており、ステップ６４の判定が否定された場合、すなわち再認証成功が通知されていない場合にはステップ６８へ移行し、前述の再認証要請メールの送信等の処理を行う。

【００７９】

また、ステップ６４の判定が肯定された場合、すなわち再認証成功が通知されて使用履歴テーブル更新処理（図７）を行っている場合にはステップ６６へ移行し、ステップ３２で抽出したユーザＩＤと対応付けて認証情報ＤＢに記憶されている電子メールアドレスを読み出し、読み出した電子メールアドレスへ例として図８に示すような確認メールを送信する。この確認メールには日時等が記載されており、今回のアクセスが万一不正アクセスであった場合にも、正当なユーザが上記の確認メールを受信・参照することで、不正アクセスがあったことを検知することができる。ステップ６６の処理を行うとステップ５２へ移行し、起動元の所定の処理モジュールへ認証成功を通知した後に、ステップ５４以降で認証要求パケットから抽出されたアクセス元ＩＰアドレス及びユーザエージェント情報の使用履歴情報への上書き登録・使用履歴テーブルへの使用履歴情報の書き戻しを行ってユーザ認証処理を終了する。これにより、使用環境が特殊なユーザであっても、正当なユーザと判定することができる。

【００８０】

なお、特殊環境フラグに１が設定されていると、ステップ４６の判定で前述の第３の条件を満足すると認証が「成功」と判定されるので、セキュリティ性が若干低下するという欠点がある。このため、ステップ４６の判定で第１の条件を満足して認証が「成功」と判定された場合、ステップ４８で特殊環境フラグに１が設定されているか否かを判定しており、判定が肯定された場合はステップ５０で特殊環境フラグを０に戻した後にステップ５２へ移行する。これにより、上記の欠点を解消することができる。

【００８１】

最後に、オンライン金融取引受付サービスの利用を申請したユーザが、オンライン金融取引用ウェブサイトへ最初にアクセスした場合について説明する。この場合、使用履歴情報にアクセス元ＩＰアドレス及びユーザエージェント情報が登録されておらず、この状態では通常ルートでの認証が困難であるので、ステップ４２の判定が否定されてステップ６８へ移行し、前述のように取引停止フラグに１を設定すると共に、再認証要請メールの送信等の処理を行うことで、再認証専用のウェブページを介して所定の再認証手続きを受けさせる。この場合も、ステップ６０で使用履歴情報にアクセス元ＩＰアドレス及びユーザエージェント情報が登録されると共に、再認証が成功すれば取引停止フラグが０に戻されるので、次回以降のアクセスでは通常ルートでの認証が行われることになる。

【００８２】

なお、上記では個々のユーザについてアクセス元ＩＰアドレス及びユーザエージェント情報を最大２組登録する場合を説明したが、これに限定されるものではなく、アクセス元ＩＰアドレス及びユーザエージェント情報の組の登録数の上限値を３以上としてもよい。この場合、既に登録されているアクセス元ＩＰアドレス及びユーザエージェント情報の組

の中に、認証要求パケットから抽出された新たなアクセス元ＩＰアドレス及びユーザエージェント情報と各々対応していると判定された組が存在していなければ、アクセス元ＩＰアドレス及びユーザエージェント情報の組の登録数が上限値に達する迄の間は、新たなアクセス元ＩＰアドレス及びユーザエージェント情報の組を追加登録し、アクセス元ＩＰアドレス及びユーザエージェント情報の登録数が上限値に達した以降は、新たなアクセス元ＩＰアドレス及びユーザエージェント情報の組を、登録した時期が最も古いアクセス元ＩＰアドレス及びユーザエージェント情報の組に上書きして登録するようにすればよい。上記事項は第７の発明に対応している。

【００８３】

また、アクセス元ＩＰアドレス及びユーザエージェント情報の組の登録数に上限を設けなくてもよい。例えば多数台のクライアント端末１８又は多数種のアクセス元（例えば多数箇所のホットスポット）を選択的に用いてアクセスを行う等の特殊な利用環境を考慮し、アクセス元ＩＰアドレス及びユーザエージェント情報の組を上限を設けずに登録する（既に登録されているアクセス元ＩＰアドレス及びユーザエージェント情報の組の中に、認証要求パケットから抽出された新たなアクセス元ＩＰアドレス及びユーザエージェント情報と各々対応していると判定された組があれば、新たなアクセス元ＩＰアドレス及びユーザエージェント情報を前記対応していると判定された組に上書きして登録し、それ以外の場合は新たなアクセス元ＩＰアドレス及びユーザエージェント情報を追加登録する）と共に、登録してからの経過期間の長さが閾値を越えるか、又は、新たなアクセス元ＩＰアドレス及びユーザエージェント情報と対応していないと判定された回数が閾値を越えたアクセス元ＩＰアドレス及びユーザエージェント情報の組を削除するようにしてもよい。この態様では、使用履歴情報が肥大化する可能性があるという欠点がある一方、利用環境が特殊なユーザであってもステップ４６で認証が「成功」と判定することができるので、認証の「条件付き成功」を設ける必要がなくなり、セキュリティ性を更に向上させることができる。

【００８４】

また、上記では本発明に係る端末装置として、ＰＣ等から成るクライアント端末１８を例に説明したが、これに限定されるものではなく、インターネットにアクセスする機能を備えたＰＤＡや携帯電話機等の携帯端末であってもよい。この種の携帯端末は無線通信網に設けられたゲートウェイサーバを介してインターネットに接続されるが、詳しくは、任意のウェブサイトにアクセスするために携帯端末から送信された情報はゲートウェイサーバで一旦受信され、インターネット１６経由での通信に適用されるプロトコル（インターネット層のプロトコル：ＩＰ、トランスポート層のプロトコル：ＴＣＰ、アプリケーション層のプロトコル：ＨＴＴＰ）に準拠したパケットへ変換されると共に、無線通信事業者が割り当て用に事前に確保している一定範囲内のＩＰアドレスのうちの何れかのＩＰアドレスがＩＰヘッダに送信元ＩＰアドレスとして設定され、無線通信事業者名や携帯端末の機種、型番、ブラウザのバージョン等を含む情報がユーザエージェント情報としてＨＴＴＰヘッダに設定された後にインターネット１６へ送出される。なお、無線通信事業者との契約形態によっては、ゲートウェイサーバと特定のウェブサーバとの間が専用線で接続され、特定のウェブサーバ宛のパケットがインターネットを経由せずに専用線経由でゲートウェイサーバから送信される場合もあるが、このような通信形態でもパケットには上記と同様に送信元ＩＰアドレスやユーザエージェント情報が設定される。そして、割り当て用に確保しているＩＰアドレスの範囲は個々の無線通信事業者毎に相違している。従って、端末装置が携帯端末であったとしても、本発明を適用して携帯端末を操作しているユーザが正当なユーザか否かを確認することは可能である。

【００８５】

更に、上記ではオンライン金融取引受付サービスを提供するオンライン金融取引用ウェブサイトにおけるユーザ認証に本発明を適用した態様を説明したが、これに限定されるものではなく、任意のサイトにおけるユーザ認証やユーザ確認に適用可能である。また、上記では、本発明を適用したユーザ認証を、ユーザＩＤ及びパスワードを用いたユーザ認証

と併用していたが、電子メールアドレス等の簡単なユーザ識別情報を事前に登録したユーザから請求がある毎に、一定の情報を配信する情報発信型サービスを提供するウェブサイトであれば、高精度なユーザ確認（認証）は不要であるので、パスワードに基づくユーザ認証を省略し、ユーザによって入力された電子メールアドレス等のユーザ識別情報に基づいて、本発明を適用したユーザ確認（認証）のみを行うようにしてもよい。

【００８６】

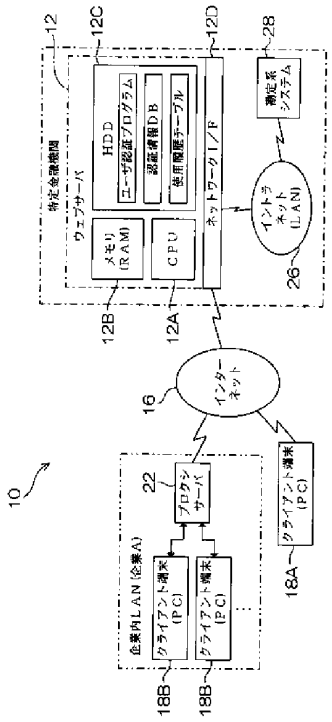
また、上記ではアクセス元ＩＰアドレスとユーザエージェント情報を各々用いてユーザ確認（認証）を行う態様を説明したが、これに限定されるものではなく、例えば個々のユーザに対して電子証明書をインストールしたクライアント端末からのアクセスのみを許可しているウェブサイトのように、個々のユーザに対して一定の端末装置からのアクセスのみを許可している場合には、ユーザエージェント情報のみをユーザ識別情報と対応付けて記憶し、ユーザエージェント情報が登録されているユーザエージェント情報と一致しているか否かに基づいてユーザ確認（認証）を行うようにしてもよい。

【符号の説明】

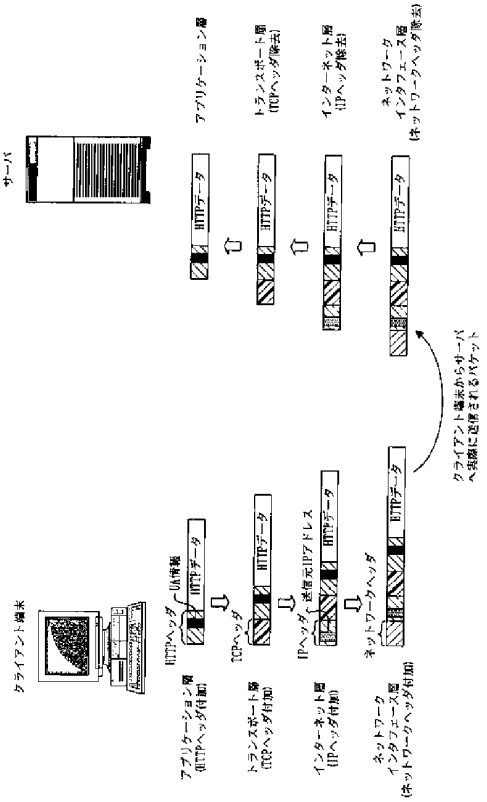
【００８７】

１０　コンピュータ・システム
１２　ウェブサーバ
１２Ｃ　ＨＤＤ
１６　インターネット
１８　クライアント端末

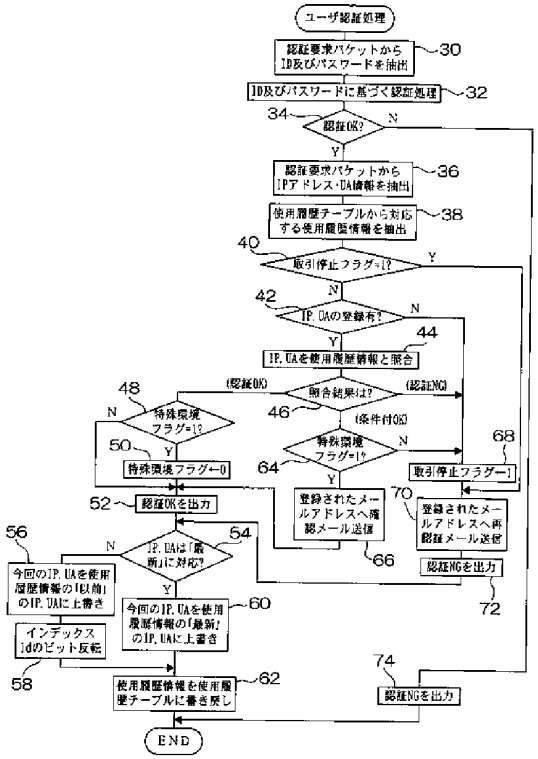
【図１】



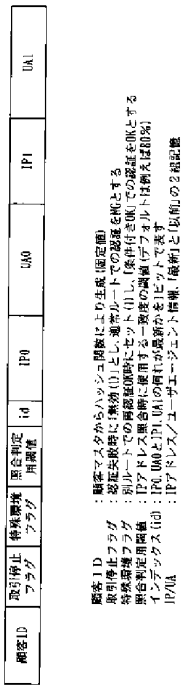
【図２】



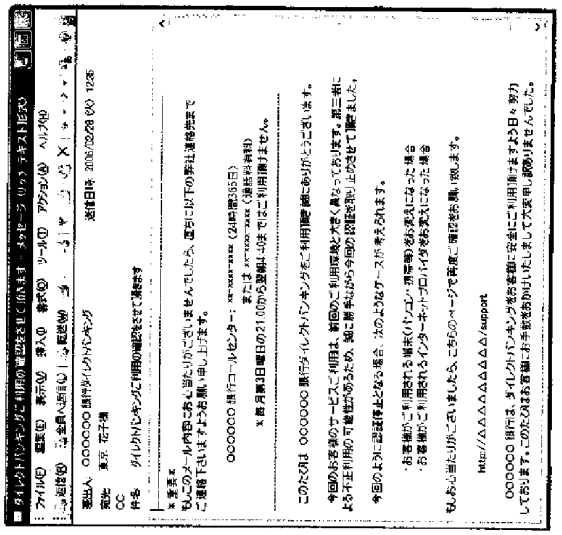
【図３】


ユーザ認証処理
認証要求パケットから ID及びパスワードを抽出
30
ID及びパスワードに基づく認証処理
32
34
認証OK?
N
Y
認証要求パケットから IPアドレス・UA情報を抽出
36
使用履歴テーブルから対応する使用履歴情報を抽出
38
40
取引停止フラグ=1?
Y
N
42
IP, UAの登録有?
N
Y
44
IP, UAを使用履歴情報と照合
48
(認証OK)
照合結果は?
(認証NG)
46
(条件付OK)
N
特殊環境フラグ=1?
50
Y
特殊環境フラグ=0
52
認証OKを出力
特殊環境フラグ=1?
N
64
Y
68
取引停止フラグ=1
登録されたメールアドレスへ照認メール送信
70
登録されたメールアドレスへ再認証メール送信
66
認証NGを出力
72
56
IP, UAは「最新」に対応?
N
54
Y
今回のIP, UAを使用履歴情報の「以前」のIP, UAに上書き
今回のIP, UAを使用履歴情報の「最新」のIP, UAに上書き
60
インデックスidのビット反転
58
使用履歴情報を使用履歴テーブルに書き戻し
62
74
認証NGを出力
END

【図４】


< 使用履歴情報の内容 >
顧客ID
取引停止フラグ
特殊環境フラグ
照合判定用履歴
id
IP0
UA0
IP1
UA1
顧客ID : 顧客マスタからハッシュ関数により生成（固定値）
取引停止フラグ : 認証失敗時に偽物(1)とし、通常ルートでの認証を0とする
特殊環境フラグ : 別ルートでの再認証OK時にセット(1)し、条件付き0K)での認証を0Kとする
照合判定用履歴 : IPアドレス照合時に使用する一致度の識別(デフォルトは最大値255)
インデックス id : IP0, UA0とIP1, UA1の何れが最新かを1ビットで表す
IP/UA : IPアドレス/ユーザエージェント情報（最新1と1世前の2組記憶

【図６】


ダイレクトバンキングご利用のお客様へ（IDあります） - メッセージ (リッチ テキスト形式)
ファイル(F) 編集(E) 表示(V) 挿入(I) 書式(O) ツール(T) アクション(A) ヘルプ(H)
差出人 OOOOOO銀行ダイレクトバンキング
送信日時 2008/02/29 (X) 12:36
宛先 東京 花子様
CC
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x署名x
もしこのメール内容にお心当たりがございませんでしたら、直ちに以下の弊社連絡先まで
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OOOOOO銀行コールセンター：xx-xxxx-xxxx (24時間365日)
または xxxxx@xxxx.co.jp (弊社受付専用)
※翌月第3日曜日の21:00から翌朝4:00までは利用できません。
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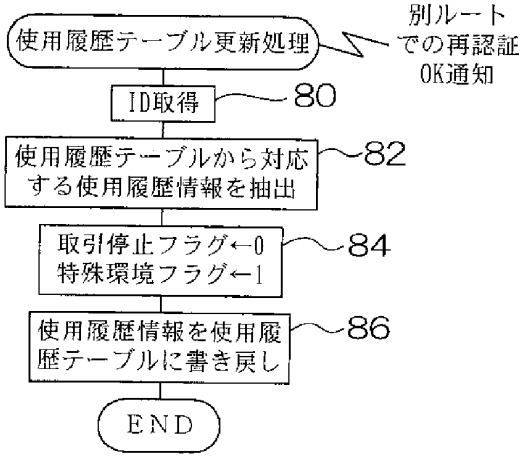
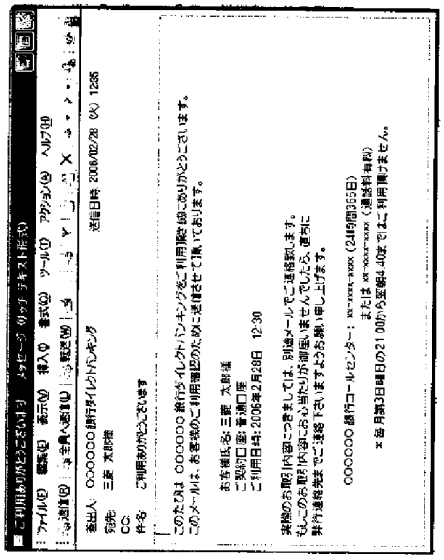
今回のお客様のサービスご利用は、前回のご利用環境と大変く異なっておりますので、第三者によるご不正利用の可能性があるため、誠に勝手ながら当行の認証強化させて頂きました。
今回のように認証停止となる場合、次のようなケースが考えられます。
・お客様がご利用される端末(パソコン・携帯電話)が変わった場合
・お客様がご利用されるインターネットプロバイダが変わった場合
もしお心当たりがございましたら、こちらのページで再度ご確認をお願い致します。
http://△△△△△△△△△/support
OOOOOO銀行は、ダイレクトバンキングをお客様に安全にご利用頂きますよう日々努力
しております。このたびはお手数をおかけしまして大変申し訳ありませんでした。

【図７】


使用履歴テーブル更新処理
別ルートでの再認証OK通知
ID取得
80
使用履歴テーブルから対応する使用履歴情報を抽出
82
取引停止フラグ←0
特殊環境フラグ←1
84
使用履歴情報を使用履歴テーブルに書き戻し
86
END

【図８】


ご利用ありがとうございます
メッセージ (リッチ テキスト形式)
ファイル(F) 編集(E) 表示(V) 挿入(I) 書式(O) ツール(T) アクション(A) ヘルプ(H)
送信(S) 全員へ返信(L) 転送(M)
差出人: OOOOOO銀行ダイレクトバンキング
宛先: 三菱 太郎様
CC:
件名: ご利用ありがとうございます
送信日時: 2006/02/28 (火) 12:35
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このメールは、お客様のご利用確認のために送信させて頂いております。
お客様氏名: 三菱 太郎様
ご契約口座: 普通口座
ご利用日時: 2006年2月28日 12:30
実際のお取引内容につきましては、別途メールでご連絡致します。
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弊行連絡先までご連絡下さいますようお願い申し上げます。
OOOOOO銀行コールセンター: xx-xxxx-xxxx (24時間365日)
または xx-xxxx-xxxx (通話料有料)
※毎月第3日曜日の21:00から至朝4:40まではご利用頂けません。

【図５】

〈使用履歴情報に基づく認証OK/NG判定表〉

		「以前」のIP, UAとの照合結果			
		IP=○, UA=○	IP=○, UA=×	IP=×, UA=○	IP=×, UA=×
「最新」のIP, UAとの照合結果	IP=○, UA=○	認証OK	認証OK	認証OK	認証OK
	IP=○, UA=×	認証OK	条件付き認証OK	認証NG	認証NG
	IP=×, UA=○	認証OK	認証NG	条件付き認証OK	認証NG
	IP=×, UA=×	認証OK	認証NG	認証NG	認証NG

但し、IP=○：IPアドレスの一致度が所定値以上
IP=×：IPアドレスの一致度が所定値未満
UA=○：UA情報が一致
UA=×：UA情報が不一致

Electronic Acknowledgement Receipt

EFS ID:	39212213
Application Number:	16785423
International Application Number:	
Confirmation Number:	9490
Title of Invention:	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA
First Named Inventor/Applicant Name:	Bjorn Markus Jakobsson
Customer Number:	21912
Filer:	Yeu-Ting George Cheng/Elaine Nguyen
Filer Authorized By:	Yeu-Ting George Cheng
Attorney Docket Number:	MJAKP016C2
Receipt Date:	20-APR-2020
Filing Date:	07-FEB-2020
Time Stamp:	21:11:52
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	MJAKP016C2_IDS_04_SB08.pdf	1053022 b751300dacac249980c3aab01fd24635bb2b861f	no	4

Warnings:

Information:					
A U.S. Patent Number Citation or a U.S. Publication Number Citation is required in the Information Disclosure Statement (IDS) form for autoloading of data into USPTO systems. You may remove the form to add the required data in order to correct the Informational Message if you are citing U.S. References. If you chose not to include U.S. References, the image of the form will be processed and be made available within the Image File Wrapper (IFW) system. However, no data will be extracted from this form. Any additional data such as Foreign Patent Documents or Non Patent Literature will be manually reviewed and keyed into USPTO systems.					
2	Non Patent Literature	ROBINSON_et_al_Caching_Context_Information_in_Persvasive_System.pdf	555421 f25e12383a96556acb486bed83ae1535667ea526	no	6
Warnings:					
Information:					
			Total Files Size (in bytes):	1608443	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	16785423
Filing Date	2020-02-07
First Named Inventor	Bjorn Markus Jakobsson
Art Unit	2653
Examiner Name	Not Assigned
Attorney Docket Number	MJAKP016C2

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

If you wish to add additional U.S. Patent citation information please click the Add button. Add

U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

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FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							

If you wish to add additional Foreign Patent Document citation information please click the Add button Add

NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

	1	ROBINSON et al., Caching Context Information in Persvasive System, MDS '06: Proceedings of the 3rd International Middleware doctoral Symposium. November 2006, PP 1 (Year: 2006)

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Yeu-Ting George Cheng/	Date (YYYY-MM-DD)	2020-04-20
Name/Print	Yeu-Ting George Cheng	Registration Number	69408

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

DECLARATION
FOR ORIGINAL U.S. PATENT APPLICATION

Attorney's Docket No. MJAKP016

As a below-named inventor, I hereby declare that:

I believe that I am the original inventor (if only one name is listed below) or an original joint inventor (if plural names are listed below) of a claimed invention in the application entitled: **VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA**, the specification of which,

(check one) 1. ☐ is attached hereto.

2. ☒ was filed on November 6, 2014 as U.S. Application No. 14/535,064 and was amended on _____.

3. ☐ was filed on _____ as International PCT Application No. _____ and was amended on _____.

I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

The above-identified application was made or authorized to be made by me.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and I acknowledge that any willful false statement made in this declaration is punishable under 18 USC 1001 by fine or imprisonment of not more than five (5) years, or both.

Full name of sole or first inventor	Bjorn Markus Jakobsson	
Signature of sole or first inventor		Date: Dec 8'14

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS, AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0125

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.:	16/785,423	Examiner:	Not Assigned
Filed:	February 07, 2020	Art Unit:	2653
Confirmation No.:	9490	Docket No.:	MJAKP016C2
First Inventor:	Bjorn Markus Jakobsson		
Title:	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA		

RESPONSE TO NOTICE TO FILE MISSING PARTS

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is a Response to the Notice to File Missing Parts mailed February 27, 2020.

Application Elements:

☒ Declaration
- ☐ Newly executed (original or copy)
- ☒ Copy from a prior application (37 CFR 1.63(d) for a continuation or divisional). The entire disclosure of the prior application from which a copy of the declaration is herein supplied is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
  - ☐ Deletion of inventors Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).

Accompanying Application Parts:

☒ Information Disclosure Statement with Form PTO/SB/08 ☐ Copies of IDS Citations
☒ Preliminary Amendment (*New claims numbered after highest original claim in prior application.*)
☒ Power of Attorney with ☒ Transmittal ☐ Statement Under 37 CFR 3.73
☐ Other:

Amendments

☐ Cancel in this application original claims _____ of the prior application before calculating the filing fee. (*At least one original independent claim must be retained.*)

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS,
AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0126

Fee Calculation (37 CFR § 1.16)

					Small Entity			Large Entity	
					Rate	Fee		Rate	Fee
Filing Fees					x $75 = $	75	OR	x $300 = $	
Search Fees					x $330 = $	330	OR	x $660 = $	
Examination Fees					x $380 = $	380	OR	x $760 = $	
CLAIMS	Filed.		Extra						
Total	21	Less 20	1		x $50 = $	50	OR	x $100 = $	
Independent	3	Less 3	0		x $230 = $		OR	x $460 = $	
Multiple Dependent Claims			-0-		x $410 = $		OR	x $820 = $	
Declaration and Surcharge Fee					X $80 = $	80	OR	X $160 = $	
Processing fee under Rule 1.17(i) to correct inventorship					X $70 = $	0		X $140 = $	
					TOTAL FILING FEE $	**915**		TOTAL FILING FEE $	

☐ Applicants petition for an extension of time to respond under 37 CFR § 1.136(a) as follows:

	SMALL ENTITY			LARGE ENTITY	
	Rate	Add'l Fee		Rate	Add'l Fee
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General Authorizations

☒ Applicants hereby make and generally authorize any Petitions for Extensions of Time as needed for this or any subsequent filings. The Commissioner is also authorized to charge any extension fees under 37 CFR §1.17 as needed to Deposit Account No. 50-0685 (Order No. MJAKP016C2).

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☒ Please send correspondence to the following address:

Customer No. 21912
VAN PELT, YI & JAMES LLP
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Cupertino, CA 95014

Dated: April 27, 2020

/Yeu-Ting George Cheng/
Yeu-Ting George Cheng
Registration No. 69408

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Electronic Acknowledgement Receipt

EFS ID:	39278482
Application Number:	16785423
International Application Number:	
Confirmation Number:	9490
Title of Invention:	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA
First Named Inventor/Applicant Name:	Bjorn Markus Jakobsson
Customer Number:	21912
Filer:	Yeu-Ting George Cheng/Elaine Nguyen
Filer Authorized By:	Yeu-Ting George Cheng
Attorney Docket Number:	MJAKP016C2
Receipt Date:	27-APR-2020
Filing Date:	07-FEB-2020
Time Stamp:	17:42:10
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$915
RAM confirmation Number	E20204QH42355684
Deposit Account	500685
Authorized User	Elaine Nguyen
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1	Applicant Response to Pre-Exam Formalities Notice	MJAKP016C2_MP_Transmittal.pdf	105992 ffb65986e9eac9798f06d8556addc7f5b68184e3	no	2
Warnings:					
Information:					
2	Oath or Declaration filed	MJAKP016C2_Executed_Dec.pdf	234781 e64be9fad857a64038c11e89545e181e7fa0d997	no	1
Warnings:					
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3	Power of Attorney	MJAKP016C2_POA_AIA82A.pdf	168411 e9c45506186e8a3a369f2be10daaf981c4d5bfb8	no	1
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5	Preliminary Amendment	MJAKP016C2_AMD_A_PRE.pdf	112227 b90f7482186364acfa1d25e583cad234f6836661	no	7
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Information:					
6	Transmittal Letter	MJAKP016C2_IDS_05_and_IDS_06_Transmittal.pdf	77939 a7e1daccfaab8f057f3f775ab5002a79f047b8e2	no	2
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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

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	Examiner Name	Not Assigned
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	Art Unit	2653
	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

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	Art Unit	2653
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

	45	U.S. Provisional Patent Application No. 61/551,370 filed October 25, 2011

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

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Signature	/Yeu-Ting George Cheng/	Date (YYYY-MM-DD)	2020-04-27
Name/Print	Yeu-Ting George Cheng	Registration Number	69408

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Electronic Patent Application Fee Transmittal

Application Number:	16785423
Filing Date:	07-Feb-2020
Title of Invention:	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA
First Named Inventor/Applicant Name:	Bjorn Markus Jakobsson
Filer:	Yeu-Ting George Cheng/Elaine Nguyen
Attorney Docket Number:	MJAKP016C2

Filed as Small Entity

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Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
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UTILITY FILING FEE (ELECTRONIC FILING)	4011	1	75	75
UTILITY SEARCH FEE	2111	1	330	330
UTILITY EXAMINATION FEE	2311	1	380	380
Pages:				
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CLAIMS IN EXCESS OF 20	2202	1	50	50
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LATE FILING FEE FOR OATH OR DECLARATION	2051	1	80	80

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
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Application Number	16/785,423
Filing Date	February 07, 2020
First Named Inventor	Bjorn Markus Jakobsson
Title	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA
Art Unit	2653
Examiner Name	Not Assigned
Attorney Docket Number	MJAKP016C2

SIGNATURE of Applicant or Patent Practitioner

Signature	/Yeu-Ting George Cheng/	Date (Optional)	
Name	Yeu-Ting George Cheng	Registration Number	69408
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

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I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

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I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

RightQuestion, LLC

☐ Inventor or Joint Inventor (title not required below)

☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)

☑ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)

☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature		Date (Optional)	
Name	Bjorn Markus Jakobsson		
Title	Manager		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ Total of forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.:	16/785,423	Examiner:	Not Assigned
Filed:	February 07, 2020	Art Unit:	2653
Confirmation No.:	9490	Docket No.:	MJAKP016C2
First Inventor:	Bjorn Markus Jakobsson		
Title:	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA		

PRELIMINARY AMENDMENT A

Mail Stop Missing Parts
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Alexandria, VA 22313-1450

Dear Sir:

Prior to the examination of the application on the merits, please amend the application as follows:

Applicant(s) believe that no (additional) fees are required beyond any fees submitted herewith. If required fees are missing or any additional fees are required during the pendency of the subject application, please charge such fees or credit any overpayment to Deposit Account No. 50-0685 (MJAKP016C2).

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IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Cancelled)

2. (New) A system, comprising:

one or more processors configured to:

receive information pertaining to a call initiated by a calling device, the information pertaining to the call including a code generated based at least in part on information associated with the calling device;

perform a security determination at least in part by verifying the code included in the information pertaining to the call initiated by the calling device; and

based at least in part on the security determination, perform at least one of blocking the call, requesting additional authentication, conveying an assurance to a user, conveying a failure to confirm, and permitting the call; and

a memory coupled to the one or more processors and configured to provide the one or more processors with instructions.

3. (New) The system recited in claim 2 wherein the information associated with the calling device that is used to generate the code is stored at an entity external to the calling device.

4. (New) The system recited in claim 2 wherein the information associated with the calling device that is used to generate the code comprises a cryptographic key associated with the calling device.

5. (New) The system recited in claim 2 wherein the code is generated based at least in part on one of symmetric key cryptography and asymmetric key cryptography.

6. (New) The system recited in claim 2 wherein the information pertaining to the call further includes a score generated for the calling device, the score indicating a validity of a phone number.

7. (New) The system recited in claim 6 wherein the security determination is performed

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based at least in part on the score generated for the calling device.

8. (New) The system recited in claim 6 wherein the score for the calling device is generated in response to the call being initiated by the calling device.

9. (New) The system recited in claim 6, wherein the score for the calling device is generated based at least in part on information associated with a user that is associated with the calling device.

10. (New) The system recited in claim 2 wherein the information pertaining to the call further includes at least one of a timestamp associated with the call and a called phone number.

11. (New) The system recited in claim 2 wherein the security determination is performed by one of a device associated with a called phone number and an entity different from the device associated with a called phone number.

12. (New) The system recited in claim 2 wherein the security determination comprises determining a validity of the call based at least in part on a cryptographic key on the calling device.

13. (New) The system recited in claim 2 wherein the information pertaining to the call further includes a timestamp, and wherein the one or more processors are configured to prevent a replay attack using the timestamp.

14. (New) The system recited in claim 2 wherein the security determination is based at least in part on a score indicating a validity of the call, and wherein the score is generated based at least in part on device information.

15. (New) The system recited in claim 14 wherein the device information used to generate the score comprises at least one of a unique software identifier, a semi-unique software identifier, an embedded hardware identifier, a user-added hardware identifier, and a device fingerprint.

16. (New) The system recited in claim 15 wherein the user-added hardware identifier is associated with at least one of a memory card and geolocation information.

17. (New) The system recited in claim 15 wherein the device fingerprint is determined based at least in part on at least one of a set of device settings, a set of installed applications, an indication of a software version, and a contact list.

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18. (New) The system recited in claim 2 wherein the one or more processors are configured to reconfirm an observed phone number associated with the call.

19. (New) The system recited in claim 2 wherein the information associated with the call is provided by an agent on the calling device.

20. (New) The system recited in claim 2 wherein the information associated with the call is provided in response to one of a detection of an outgoing communication and a prompt to validate communication session information.

21. (New) A method, comprising:

receiving information pertaining to a call initiated by a calling device, the information pertaining to the call including a code generated based at least in part on information associated with the calling device;

performing a security determination at least in part by verifying the code included in the information pertaining to the call initiated by the calling device; and

based at least in part on the security determination, performing at least one of blocking the call, requesting additional authentication, conveying an assurance to a user, conveying a failure to confirm, and permitting the call.

22. (New) A computer program product embodied in a non-transitory computer readable storage medium and comprising computer instructions for:

receiving information pertaining to a call initiated by a calling device, the information pertaining to the call including a code generated based at least in part on information associated with the calling device;

performing a security determination at least in part by verifying the code included in the information pertaining to the call initiated by the calling device; and

based at least in part on the security determination, performing at least one of blocking the call, requesting additional authentication, conveying an assurance to a user, conveying a failure to confirm, and permitting the call.

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REMARKS

Claim 1 has been cancelled. New Claims 2-22 have been added. Claims 2-22 are pending. No new matter has been added.

New Claims

Support for new Claims 2, 21, and 22 may be found, without limitation, in Paragraphs [0043], [0046], [0048]-[0049], [0052], [0065], [0083]-[0084], and [0087] of the Specification.

Support for new Claim 3 may be found, without limitation, in Paragraphs [0046] and [0065] of the Specification.

Support for new Claim 4 may be found, without limitation, in Paragraphs [0046] and [0065] of the Specification.

Support for new Claim 5 may be found, without limitation, in Paragraphs [0046] and [0065] of the Specification.

Support for new Claim 6 may be found, without limitation, in Paragraphs [0048]-[0049] of the Specification.

Support for new Claim 7 may be found, without limitation, in Paragraphs [0048]-[0049] of the Specification.

Support for new Claim 8 may be found, without limitation, in Paragraph [0049] of the Specification.

Support for new Claim 9 may be found, without limitation, in Paragraph [0049] of the Specification.

Support for new Claim 10 may be found, without limitation, in Paragraph [0046] of the Specification.

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Support for new Claim 11 may be found, without limitation, in Paragraph [0022] of the Specification.

Support for new Claim 12 may be found, without limitation, in Paragraph [0058] of the Specification.

Support for new Claim 13 may be found, without limitation, in Paragraph [0047] of the Specification.

Support for new Claim 14 may be found, without limitation, in Paragraph [0058] of the Specification.

Support for new Claim 15 may be found, without limitation, in Paragraph [0049] of the Specification.

Support for new Claim 16 may be found, without limitation, in Paragraph [0049] of the Specification.

Support for new Claim 17 may be found, without limitation, in Paragraph [0049] of the Specification.

Support for new Claim 18 may be found, without limitation, in Paragraph [0051] of the Specification.

Support for new Claim 19 may be found, without limitation, in Paragraph [0022] of the Specification.

Support for new Claim 20 may be found, without limitation, in Paragraph [0022] of the Specification.

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The foregoing amendments are not to be taken as an admission of unpatentability of any of the claims prior to the amendments.

Reconsideration of the application and allowance of all claims are respectfully requested based on the preceding remarks. If at any time the Examiner believes that an interview would be helpful, please contact the undersigned.

Respectfully submitted,

Dated: April 27, 2020

/Yeu-Ting George Cheng/
Yeu-Ting George Cheng
Registration No. 69408
408-207-4765

VAN PELT, YI & JAMES LLP
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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

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	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

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	Examiner Name	Not Assigned
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	21	8566938		2013-10-22	PRAKASH GAGAN	
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	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

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	Art Unit	2653
	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

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See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

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Signature	/Yeu-Ting George Cheng/	Date (YYYY-MM-DD)	2020-04-27
Name/Print	Yeu-Ting George Cheng	Registration Number	69408

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.:	16/785,423	Examiner:	Not Assigned
Filed:	February 07, 2020	Art Unit:	2653
Confirmation No.:	9490	Docket No.:	MJAKP016C2
First Inventor:	Bjorn Markus Jakobsson		
Title:	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA		

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR §§1.56 AND 1.97(B) BEFORE MAILING OF A FIRST OFFICE ACTION

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The references listed in the attached PTO SB/08 may be material to examination of the above-identified patent application. Applicants disclose the list of these references in compliance with their duty of disclosure pursuant to 37 CFR §§1.56 and 1.97. The Examiner is requested to make these references of official record in this application. The above-identified application is a continuation of prior application U.S. Patent Application No. 16/180,373, which is a continuation prior application U.S. Patent Application No. 14/535,064. These prior applications are being relied upon for an earlier filing date under 35 U.S.C. § 120. Because the listed references were either cited by the PTO, or submitted to the PTO in the prior applications, under 37 CFR §1.98(d), Applicants submit that copies need not be provided.

This Information Disclosure Statement is not to be construed as a representation that a search has been made, that additional information material to the examination of this application does not exist, or that these references indeed constitute prior art.

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS,
AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0177

This Information Disclosure Statement is being filed (1) with the above-referenced application or (2) within three months of the filing date of the above-referenced application or (3) before the mailing date of a first Office Action on the merits or (4) before the mailing date of a first Office Action after filing of a Request for Continued Examination. Accordingly, it is believed that no fees are due in connection with the filing of this Information Disclosure Statement. However, if it is determined that any fees are due, the Commissioner is hereby authorized to charge such fees to Deposit Account 50-0685 (Order No. MJAKP016C2).

Respectfully submitted,

Dated: April 27, 2020

/Yeu-Ting George Cheng/
Yeu-Ting George Cheng
Registration No. 69408
408-207-4765

VAN PELT, YI & JAMES LLP
10050 N. Foothill Blvd., Suite 200
Cupertino, CA 95014
Fax 408-973-2595

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS,
AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0178

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/785,423	02/07/2020	Bjorn Markus Jakobsson	MJAKP016C2

CONFIRMATION NO. 9490

21912
VAN PELT, YI & JAMES LLP
10050 N. FOOTHILL BLVD #200
CUPERTINO, CA 95014

POA ACCEPTANCE LETTER

OC000000116573809

Date Mailed: 04/29/2020

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 04/27/2020.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/rnegga/

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
16/785,423	02/07/2020	2653	915	MJAKP016C2	21	3

CONFIRMATION NO. 9490

UPDATED FILING RECEIPT

21912
VAN PELT, YI & JAMES LLP
10050 N. FOOTHILL BLVD #200
CUPERTINO, CA 95014

OC000000118373939

Date Mailed: 04/29/2020

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections provided that the request is grantable.

Inventor(s)

Bjorn Markus Jakobsson, Portola Valley, CA;

Applicant(s)

RightQuestion, LLC, Portola Valley, CA;

Power of Attorney: The patent practitioners associated with Customer Number 21912

Domestic Priority data as claimed by applicant

This application is a CON of 16/180,373 11/05/2018
which is a CON of 14/535,064 11/06/2014
which claims benefit of 61/901,322 11/07/2013

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 02/25/2020

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 16/785,423**

Projected Publication Date: Request for Non-Publication Acknowledged

Non-Publication Request: Yes

Early Publication Request: No
**** SMALL ENTITY ****
Title

VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA

Preliminary Class

379

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 16/785,423

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	75		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	330		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	380		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	21 minus 20 =	* 1	x 50 =	50	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3 minus 3 =	*	x 230 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	835		TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

Electronic Acknowledgement Receipt

EFS ID:	40008407
Application Number:	16785423
International Application Number:	
Confirmation Number:	9490
Title of Invention:	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA
First Named Inventor/Applicant Name:	Bjorn Markus Jakobsson
Customer Number:	21912
Filer:	Yeu-Ting George Cheng/Elaine Nguyen
Filer Authorized By:	Yeu-Ting George Cheng
Attorney Docket Number:	MJAKP016C2
Receipt Date:	15-JUL-2020
Filing Date:	07-FEB-2020
Time Stamp:	14:36:12
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	MJAKP016C2_IDS_07_SB08.pdf	1052966 4a43ad8117b77c108f897cb2695e57de1d533b23	no	4

Warnings:

Information:	
Total Files Size (in bytes):	1052966

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	16785423
Filing Date	2020-02-07
First Named Inventor	Bjorn Markus Jakobsson
Art Unit	2653
Examiner Name	Akelaw Teshale
Attorney Docket Number	MJAKP016C2

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20110061089		2011-03-10	O'SULLIVAN PATRICK J	

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							

If you wish to add additional Foreign Patent Document citation information please click the Add button Add

NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Akelaw Teshale
	Attorney Docket Number	MJAKP016C2

	1	

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Akelaw Teshale
	Attorney Docket Number	MJAKP016C2

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Yeu-Ting George Cheng/	Date (YYYY-MM-DD)	2020-07-15
Name/Print	Yeu-Ting George Cheng	Registration Number	69408

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	16785423
Filing Date:	07-Feb-2020
Title of Invention:	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA
First Named Inventor/Applicant Name:	Bjorn Markus Jakobsson
Filer:	Yeu-Ting George Cheng/Elaine Nguyen
Attorney Docket Number:	MJAKP016C2

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	2202	5	50	250
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**250**

Electronic Acknowledgement Receipt

EFS ID:	40117392
Application Number:	16785423
International Application Number:	
Confirmation Number:	9490
Title of Invention:	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA
First Named Inventor/Applicant Name:	Bjorn Markus Jakobsson
Customer Number:	21912
Filer:	Yeu-Ting George Cheng/Elaine Nguyen
Filer Authorized By:	Yeu-Ting George Cheng
Attorney Docket Number:	MJAKP016C2
Receipt Date:	27-JUL-2020
Filing Date:	07-FEB-2020
Time Stamp:	19:08:24
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$250
RAM confirmation Number	E20207QJ08570287
Deposit Account	500685
Authorized User	Elaine Nguyen

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.16 (National application filing, search, and examination fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Preliminary Amendment	MJAKP016C2_AMD_B_PRE.pdf	114520 6164bdf73a21413cdd893884a0b7a9314a33fad1	no	7
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30673 92e0f277cd0344f2c0cfc0e278e6031e5f8d7ae4	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	145193		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.:	16/785,423	Examiner:	Not Assigned
Filed:	February 07, 2020	Art Unit:	2653
Confirmation No.:	9490	Docket No.:	MJAKP016C2
First Inventor:	Bjorn Markus Jakobsson		
Title:	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA		

PRELIMINARY AMENDMENT B

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Prior to the examination of the application on the merits, please amend the application as follows:

Applicant(s) believe that no (additional) fees are required beyond any fees submitted herewith. If required fees are missing or any additional fees are required during the pendency of the subject application, please charge such fees or credit any overpayment to Deposit Account No. 50-0685 (MJAKP016C2).

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS,
AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
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REMARKS

Claims 6 and 7 have been cancelled. Claims 2, 5, 8-9, 16, 18, and 21-22 have been amended to clarify the subject matter regarded as the invention. New Claims 23-29 have been added. Claims 2-5, and 8-29 are pending. No new matter has been added.

Support for the amendments to independent Claims 2, 21, and 22 may be found, without limitation, in Paragraphs [0046] and [0048]-[0049] of the Specification.

New Claims

Support for new Claim 23 may be found, without limitation, in Paragraph [0061] of the Specification.

Support for new Claim 24 may be found, without limitation, in Paragraph [0062] of the Specification.

Support for new Claim 25 may be found, without limitation, in Paragraph [0062] of the Specification.

Support for new Claim 26 may be found, without limitation, in Paragraph [0049] of the Specification.

Support for new Claim 27 may be found, without limitation, in Paragraphs [0046] and [0065] of the Specification.

Support for new Claim 28 may be found, without limitation, in Paragraph [0089] of the Specification.

Support for new Claim 29 may be found, without limitation, in Paragraphs [0046] and [0089] of the Specification.

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The foregoing amendments are not to be taken as an admission of unpatentability of any of the claims prior to the amendments.

Reconsideration of the application and allowance of all claims are respectfully requested based on the preceding remarks. If at any time the Examiner believes that an interview would be helpful, please contact the undersigned.

Respectfully submitted,

Dated: July 27, 2020

/Yeu-Ting George Cheng/
Yeu-Ting George Cheng
Registration No. 69408
408-207-4765

VAN PELT, YI & JAMES LLP
10050 N. Foothill Blvd., Suite 200
Cupertino, CA 95014
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EX-1002
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IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Cancelled)

2. (Currently amended) A system, comprising:

one or more processors configured to:

receive information pertaining to a call initiated by a calling device, the information pertaining to the call including: (1) a [[code]] value generated based at least in part on information associated with the calling device, and (2) a score generated for the calling device, the score indicating a validity of a phone number;

perform a security determination based at least in part on the score generated for the calling device, and at least in part by verifying the value [[code]] included in the information pertaining to the call initiated by the calling device; and

based at least in part on the security determination, perform at least one of ~~blocking the call, requesting additional authentication,~~ conveying an assurance to a user[[,]] or conveying a failure to confirm to the user~~, and permitting the call~~; and

a memory coupled to the one or more processors and configured to provide the one or more processors with instructions.

3. (Currently amended) The system recited in claim 2 wherein the information associated with the calling device ~~that is used to generate the code~~ is stored at an entity external to the calling device.

4. (Currently amended) The system recited in claim 2 wherein the information associated with the calling device ~~that is used to generate the code~~ comprises a cryptographic key associated with the calling device.

5. (Currently amended) The system recited in claim 2 wherein the [[code]] value is generated based at least in part on one of symmetric key cryptography and asymmetric key cryptography.

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6. (Cancelled)

7. (Cancelled)

8. (Currently amended) The system recited in claim [[6]] 2 wherein the score for the calling device is generated in response to the call being initiated by the calling device.

9. (Currently amended) The system recited in claim [[6]] 2, wherein the score for the calling device is generated based at least in part on information associated with a user that is associated with the calling device.

10. (Previously Presented) The system recited in claim 2 wherein the information pertaining to the call further includes at least one of a timestamp associated with the call and a called phone number.

11. (Previously Presented) The system recited in claim 2 wherein the security determination is performed by one of a device associated with a called phone number and an entity different from the device associated with a called phone number.

12. (Previously Presented) The system recited in claim 2 wherein the security determination comprises determining a validity of the call based at least in part on a cryptographic key on the calling device.

13. (Previously Presented) The system recited in claim 2 wherein the information pertaining to the call further includes a timestamp, and wherein the one or more processors are configured to prevent a replay attack using the timestamp.

14. (Previously Presented) The system recited in claim 2 wherein the security determination is based at least in part on a score indicating a validity of the call, and wherein the score is generated based at least in part on device information.

15. (Previously Presented) The system recited in claim 14 wherein the device information used to generate the score comprises at least one of a unique software identifier, a semi-unique software identifier, an embedded hardware identifier, a user-added hardware identifier, and a device fingerprint.

16. (Currently amended) The system recited in claim 15 wherein the user-added hardware identifier is associated with ~~at least one of a memory card and~~ geolocation information.

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17. (Previously Presented) The system recited in claim 15 wherein the device fingerprint is determined based at least in part on at least one of a set of device settings, a set of installed applications, an indication of a software version, and a contact list.

18. (Currently amended) The system recited in claim 2 wherein the one or more processors are configured to confirm ~~reconfirm~~ an observed phone number associated with the call.

19. (Previously Presented) The system recited in claim 2 wherein the information associated with the call is provided by an agent on the calling device.

20. (Previously Presented) The system recited in claim 2 wherein the information associated with the call is provided in response to one of a detection of an outgoing communication and a prompt to validate communication session information.

21. (Currently amended) A method, comprising:

receiving information pertaining to a call initiated by a calling device, the information pertaining to the call including: (1) a [[code]] value generated based at least in part on information associated with the calling device, and (2) a score generated for the calling device, the score indicating a validity of a phone number;

performing a security determination based at least in part on the score generated for the calling device, and at least in part by verifying the [[code]] value included in the information pertaining to the call initiated by the calling device; and

based at least in part on the security determination, performing at least one of ~~blocking the call, requesting additional authentication,~~ conveying an assurance to a user[[,]] or conveying a failure to confirm to the user~~, and permitting the call~~.

22. (Currently amended) A computer program product embodied in a non-transitory computer readable storage medium and comprising computer instructions for:

receiving information pertaining to a call initiated by a calling device, the information pertaining to the call including: (1) a value [[code]] generated based at least in part on information associated with the calling device, and (2) a score generated for the calling device, the score indicating a validity of a phone number;

performing a security determination based at least in part on the score generated for the calling device, and at least in part by verifying the value [[code]] included in the information pertaining to the call initiated by the calling device; and

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based at least in part on the security determination, performing at least one of ~~blocking the call, requesting additional authentication,~~ conveying an assurance to a user[[,]] or conveying a failure to confirm to the user~~, and permitting the call~~.

23. (New) The system recited in claim 2 wherein the score is based at least in part on an age of the information associated with the calling device.

24. (New) The system recited in claim 2 wherein the score is based at least in part on one or more of feedback associated with a particular phone call, an indication of a stolen device, an indication of a potential spoof attempt, an indication of fraud related to a device, or an indication of a verification that was subsequently determined to be errant.

25. (New) The system recited in claim 2 wherein the score comprises a reputation score.

26. (New) The system recited in claim 15 wherein the user-added hardware identifier is associated with a memory card.

27. (New) The system recited in claim 2 wherein the value is generated at least in part by the calling device.

28. (New) The system recited in claim 2 wherein the value is provided at least in part by an entity different from the calling device.

29. (New) The system recited in claim 2 wherein the value comprises at least one of an authentication code, a counter value, a pseudo-random number, a number specific to a particular session, or a number specific to the calling device.

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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	16785423
Filing Date	2020-02-07
First Named Inventor	Bjorn Markus Jakobsson
Art Unit	2653
Examiner Name	Not Assigned
Attorney Docket Number	MJAKP016C2

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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	2	6161130		2000-12-12	HORVITZ ERIC	
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	4	6721784		2004-04-13	LEONARD JON N	
	5	7293063		2007-11-06	SOBEL WILLIAM E	
	6	7299261		2007-11-20	OLIVER JONATHAN J	
	7	7644274		2010-01-05	JAKOBSSON BJORN MARKUS	
	8	7797752		2010-09-14	VAIDYA VIMAL	

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	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

	9	7809795		2010-10-05	COOLEY SHAUN	
	10	7809796		2010-10-05	BLOCH ERIC	
	11	7814545		2010-10-12	OLIVER JONATHAN J	
	12	7831522		2010-11-09	SATISH SOURABH	
	13	7899213		2011-03-01	OTSUKA YUJI	
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	21	8566938		2013-10-22	PRAKASH GAGAN	
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	27	8719940		2014-05-06	HIGBEE AARON	
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	30	8949353		2015-02-03	BEGUIN JULIEN	

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	Attorney Docket Number	MJAKP016C2

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	32	8984640		2015-03-17	EMIGH AARON T	
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	34	9060057		2015-06-16	DANIS SERDAR ARTUN	
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	36	9245115		2016-01-26	JAKOBSSON BJORN MARKUS	
	37	9258314		2016-02-09	XIAO FEI	
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	39	9338287		2016-05-10	RUSSO RICHARD J	
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	43	9613341		2017-04-04	SHIVAKUMAR SHAILESH KUMAR	
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	5	20030229672		2003-12-11	KOHN DANIEL	
	6	20030236845		2003-12-25	PITSOS ERRIKOS	
	7	20040176072		2004-09-09	GELLENS RANDALL	
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	9	20040203589		2004-10-14	WANG JIWEI	
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	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

	15	20050182735		2005-08-18	ZAGER ROBERT	
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	Attorney Docket Number	MJAKP016C2

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	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

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	38	20060253597		2006-11-09	MUJICA ALBERTO	
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	40	20060265498		2006-11-23	TURGEMAN YEHUDA	
	41	20070019235		2007-01-25	LEE DONG H	
	42	20070027992		2007-02-01	JUDGE PAUL	
	43	20070038718		2007-02-15	KHOO JUSTIN	
	44	20070067465		2007-03-22	BLINN ARNOLD	
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	Art Unit	2653
	Examiner Name	Not Assigned
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.T/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Yeu-Ting George Cheng/	Date (YYYY-MM-DD)	2020-04-27
Name/Print	Yeu-Ting George Cheng	Registration Number	69408

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
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	1	20060101334		2006-05-11	LIAO JERRY CHINGHSIEN	
	2	20070136806		2007-06-14	BERMAN REUBEN	
	3	20170195310		2017-07-06	TYLER SIMON PAUL	

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
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EXAMINER SIGNATURE

Examiner Signature	/AKELAW TESHALE/	Date Considered	08/03/2020

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Signature	/Yeu-Ting George Cheng/	Date (YYYY-MM-DD)	2020-03-12
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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
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S3	265	((("JAKOBSSON") near3 ("Bjorn"))).INV.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/07/31 21:45
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S8	569	S5 or S6 or S7	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/07/31 22:15
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S12	570	S9 or S10 or S11	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 10:39
S13	275,692	(communication or connection$l or session or call$4) same ((telephone or phone) near3 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 11:23
S14	215,383	(valid$4 or authenticat$4 or verif$5 or validat$3 or identif$3 or authoriz$3 or authoris$3 or fingerpring or print or password or passcode or (pass adj code) or (pass adj word) or key) same ((telephone or phone) near3 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 11:45
S15	116,979	S13 same S14	US-PGPUB; USPAT; USOCR;	OR	OFF	2020/08/01 11:53

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
S16	36	S12 and S15	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 11:53
S17	8	((("RIGHTQUESTION") near3 ("LLC"))).AS,AANM.	USPAT	OR	OFF	2020/08/01 11:53
S18	265	((("JAKOBSSON") near3 ("Bjorn"))).INV.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/08/01 11:53
S19	265	S17 or S18	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 11:53
S20	17	S15 and S19	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 11:53
S21	3,475	S15 and ((symmetric$3 or mirror$4 or asymmetric$4) near5 (crypto$3 or cryptanaly$3 or cipher$3 or cypher$3 or encrypt$3 or encipher$3 or scrambl$3 or decrypt$3 or decipher$3 or unencrypt$3 or unscrambl$3 or key$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 12:21
S22	2	S12 and S21	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 12:21
S23	39,336	(symmetric$3 or mirror$4 or asymmetric$4) near5 (crypto$3 or cryptanaly$3 or cipher$3 or cypher$3	US-PGPUB; USPAT; USOCR;	OR	OFF	2020/08/01 12:23

		or encrypt$3 or encipher$3 or scrambl$3 or decrypt$3 or decipher$3 or unencrypt$3 or unscrambl$3) near5 key$3	FPRS; EPO; JPO; DERWENT; IBM_TDB			
S24	4,742	S23 and ((valid$4 or authenticat$4 or verif$5 or validat$3 or identif$3 or authoriz$3 or authoris$3) same ((telephone or phone) near3 number))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 12:25
S25	1,824	S24 and attack$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 12:29
S26	1	S12 and S25	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 12:29
S27	91,766	S15 same((valid$4 or authenticat$4 or verif$5 or validat$3 or identif$3 or authoriz$3 or authoris$3) same ((telephone or phone) near3 number))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 12:33
S28	91,766	S15 same ((valid$4 or authenticat$4 or verif$5 or validat$3 or identif$3 or authoriz$3 or authoris$3) same ((telephone or phone) near3 number))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 12:33
S29	1,963	S23 and S28	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 12:40
S30	1,963	S29 and ((valid$4 or authenticat$4 or verif$5 or validat$3 or identif$3 or authoriz$3 or authoris$3) same ((telephone or phone) near3 number))	US-PGPUB; USPAT; USOCR; FPRS; EPO;	OR	ON	2020/08/01 12:40

			JPO; DERWENT; IBM_TDB			
S31	982	S30 and attack$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 12:41
S32	390	S31 and (valid$5 with number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 12:42
S34	900	S31 and (H04M3/42042 or H04M3/382 or H04W4/14 or H04L63/0428 OR H04L63/08 OR H04L63/06 OR H04L63/0853 OR H04L9/3247 OR H04L2209/80 OR H04L63/0838 OR H04L9/3234 OR H04L63/0435 OR H04L63/062 OR H04L63/126 OR H04L63/101 OR H04L63/083 OR H04L67/12 OR H04L9/0819 OR H04L9/0869 OR H04L9/3271 OR H04L63/0442 OR H04L63/10 OR H04L63/123 OR H04L63/18 OR H04L9/14 OR H04L63/0823 OR H04L9/0894 OR H04L2209/24 OR H04L2209/56 OR H04L2209/805 OR H04L63/102 OR H04L67/06 OR H04L9/0866 OR H04L9/088 OR H04L9/0891 OR H04L9/3231 OR H04L2209/12 OR H04L63/0815 OR H04L63/0884 OR H04L63/20 OR H04L67/04 OR H04L9/10 OR H04L9/321 OR H04L63/0272 OR H04L63/0421 OR H04L63/0846 OR H04L63/0876 OR H04L63/145 OR H04L67/02 OR H04L67/1097 OR H04L67/125 OR H04L9/0861 OR H04L9/3226 OR H04L9/3228 OR H04L9/3239 OR H04L9/3273 OR H04L2463/061 OR H04L2463/102 OR H04L63/0464 OR H04L63/0807 OR H04L63/0861 OR H04L67/10 OR H04L67/18 OR H04L67/22 OR H04L67/303 OR H04L9/0625 OR H04L9/0643 OR H04L9/0662 OR	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 13:16

		H04L9/0825 OR H04L9/085 OR H04L9/3213 OR H04L9/3263 OR H04L9/34 OR H04L12/28 OR H04L2012/2841 OR H04L2209/38 OR H04L2209/64 OR H04L2209/84 OR H04L2463/062 OR H04L2463/082 OR H04L29/06 OR H04L51/10 OR H04L51/14 OR H04L51/28 OR H04L51/32 OR H04L61/20 OR H04L61/2539 OR H04L61/2596 OR H04L63/0281 OR H04L63/061 OR H04L63/105 OR H04L63/12 OR H04L63/1466 OR H04L63/164 OR H04L63/168 OR H04L63/30 OR H04L65/102 OR H04L65/1069 OR H04L67/14 OR H04L69/12 OR H04L69/14 OR H04L9/006 OR H04L9/0637 OR H04L9/08 OR H04L9/0822 OR H04L9/0827 OR H04L9/083 OR H04L9/0838 OR H04L9/0841 OR H04L9/0847 OR H04L9/0863 OR H04L9/0877 OR H04L9/0897 OR H04L9/32 OR H04L9/3215 OR H04L9/3242 OR H04L9/3268 OR G06Q20/40 OR G06Q20/12 OR G06Q20/385 OR G06Q20/42 OR G06Q20/382 OR G06Q20/3821 OR G06Q20/4014 OR G06Q2220/00 OR G06Q20/32 OR G06Q20/3226 OR G06Q20/3674 OR G06Q20/38215 OR G06Q30/06 OR G06Q20/3829 OR G06Q20/425 OR G06Q20/10 OR G06Q20/322 OR G06Q20/401 OR G06Q20/4018 OR G06Q20/02 OR G06Q20/3227 OR G06Q20/4016 OR G06Q20/045 OR G06Q20/047 OR G06Q20/145 OR G06Q20/3223 OR G06Q20/325 OR G06Q20/327 OR G06Q20/352 OR G06Q20/367 OR G06Q20/409 OR G06Q20/341 OR G06Q50/24 OR G06Q20/105 OR G06Q20/20 OR G06Q20/3255 OR G06Q10/063 OR G06Q20/3278 OR G06Q20/354 OR G06Q20/36 OR G06Q20/3823 OR G06Q20/386 OR G06Q30/0201 OR G06Q30/0284 OR G06Q40/08 OR G06Q10/0635 OR G06Q10/107 OR G06Q20/085 OR G06Q20/18 OR G06Q20/202 OR G06Q20/206 OR G06Q20/342 OR G06Q20/4012 OR G06Q20/405 OR G06Q30/0215 OR G06Q30/0601 OR G06Q40/00 OR				

		G06Q40/02 OR H04W12/06 OR H04W12/001 OR H04W12/0023 OR H04W12/004 OR H04W4/70 OR H04W8/18 OR H04W12/02 OR H04W12/04 OR H04W12/0609 OR H04W12/08 OR H04W12/12 OR H04W88/02 OR H04W12/0027 OR H04W12/0608 OR H04W12/10 OR H04W12/1206 OR H04W12/1208 OR H04W12/0013 OR H04W12/00503 OR H04W12/00504 OR H04W12/00508 OR H04W12/0401 OR H04W12/0802).CPC.				
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S36	158	S31 and (valid$5 near3 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 13:21
S37	22	S31 and (valid$5 near3 ((phone or telephone) adj2 number))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 13:37
S38	158	S36 and ((phone or telephone) adj2 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 13:38
S39	31	S38 and (timestamp pr (time adj stamp))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 13:40
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S46	39,293	(symmetric$3 or asymmetric$4) near5 (crypto$5 or cryptanaly$3 or cipher$3 or cypher$3 or encrypt$3 or encipher$3 or scrambl$3 or decrypt$3 or decipher$3 or unencrypt$3 or unscrambl$3) near5 key$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 16:55
S47	17	S45 and S46	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 16:57
S48	17	S47 and ((phone or telephone) adj2 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 16:59

S49	12	S48 and ((valid$4 or authenticat$4 or verif$5 or validat$3 or identif$3 or authoriz$3 or authoris$3) with ((phone or telephone) adj2 number))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 17:00
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S56	18	(US-20150030156-$ or US-20060004772-$ or US-20100293382-$ or US-20110296440-$ or US-20120204032-$ or US-20120191615-$ or US-20110270748-$ or US-20100293381-$ or US-20100327054-$ or US-20120018506-$ or US-20050216421-$ or US-20030105725-$).did. or (US-7194618-$ or US-8094788-$ or US-7631193-$ or US-5613012-$ or US-5805719-$ or US-7216109-$).did.	US-PGPUB; USPAT	OR	OFF	2020/08/01 17:45
S57	275,692	(communication or connection$l or session or call$4) same ((telephone or phone) near3 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 17:48
S58	215,383	(valid$4 or authenticat$4 or verif$5 or validat$3 or identif$3 or authoriz$3 or authoris$3 or fingerpring or print or password or passcode or (pass adj code) or (pass adj word) or key) same ((telephone or phone) near3 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 17:48
S59	116,979	S57 same S58	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 17:48
S60	59,678	S57 same ((convey$4 or notify$4 or deliver$4 or notif$4 or inform$4 or communicat$4 or report$4) near5 (user or caller or calling or party))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	OFF	2020/08/01 17:49

			DERWENT; IBM_TDB			
S62	59,678	S60 same ((convey$4 or notify$4 or deliver$4 or notif$4 or inform$4 or communicat$4 or report$4) near5 (user or caller or calling or party))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 17:50
S63	586	S55 or S56	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 17:50
S66	29,691	S62 same device	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 17:51
S67	17	S63 and S66	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 17:52
S68	3	"9338287".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 19:07
S69	22	(US-20150030156-$ or US-20060004772-$ or US-20100293382-$ or US-20110296440-$ or US-20120204032-$ or US-20120191615-$ or US-20110270748-$ or US-20100293381-$ or US-20100327054-$ or US-20120018506-$ or US-20050216421-$ or US-20030105725-$ or US-20120253810-$ or US-20110294478-$ or US-20110145152-$).did. or (US-7194618-$ or US-8094788-$ or US-7631193-$ or US-	US-PGPUB; USPAT	OR	OFF	2020/08/01 19:08

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S70	121,228	device with ((telephone or phone) near3 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 19:09
S71	15	S69 and S70	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 19:10
S72	44	S63 and S70	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 19:12
S73	10	S46 and S72	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 19:12
S74	3	"9060057".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 19:41
S75	22	(US-20150030156-$ or US-20060004772-$ or US-20100293382-$ or US-20110296440-$ or US-20120204032-$ or US-20120191615-$ or US-20110270748-$ or US-20100293381-$ or US-20100327054-$ or US-20120018506-$ or US-20050216421-$ or US-20030105725-$ or US-20120253810-$ or US-20110294478-$ or US-20110145152-$).did. or (US-7194618-$ or US-8094788-$ or US-7631193-$ or US-	US-PGPUB; USPAT	OR	OFF	2020/08/01 20:51

		5613012-$ or US-5805719-$ or US-7216109-$ or US-9338287-$).did.				
S76	89,517	(valid$4 or authenticat$4 or verif$5 or validat$3 or identif$3 or authoriz$3 or authoris$3 or fingerpring or print or password or passcode or (pass adj code) or (pass adj word) or key) same ((telephone or phone) near3 number) same device	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 20:51
S77	17	S75 and S76	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 20:55
S78	12	S77 and ((symmetric$3 or asymmetric$4) near5 (crypto$5 or cryptanaly$3 or cipher$3 or cypher$3 or encrypt$3 or encipher$3 or scrambl$3 or decrypt$3 or decipher$3 or unencrypt$3 or unscrambl$3) near5 key$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 20:56
S79	12	S78 and ((phone or telephone) adj2 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 21:12
S80	0	"9338287".pn. and ((symmetric$3 or asymmetric$4) near5 (crypto$5 or cryptanaly$3 or cipher$3 or cypher$3 or encrypt$3 or encipher$3 or scrambl$3 or decrypt$3 or decipher$3 or unencrypt$3 or unscrambl$3) near5 key$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 21:44
S81	0	"9325839".pn. and ((symmetric$3 or asymmetric$4) near5 (crypto$5 or cryptanaly$3 or cipher$3 or cypher$3 or encrypt$3 or encipher$3 or scrambl$3 or decrypt$3 or decipher$3 or unencrypt$3 or unscrambl$3) near5 key$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 21:44
S82	0	"9338287".pn. and ((symmetric$3 or asymmetric$4) near5 (crypto$5 or cryptanaly$3 or cipher$3 or cypher$3 or encrypt$3 or encipher$3 or scrambl$3 or decrypt$3 or decipher$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	ON	2020/08/01 21:44

		or unencrypt$3 or unscrambl$3) near5 key$3)	DERWENT; IBM_TDB			
S83	0	"9325839".pn. and ((symmetric$3 or asymmetric$4) near5 (crypto$5 or cryptanaly$3 or cipher$3 or cypher$3 or encrypt$3 or encipher$3 or scrambl$3 or decrypt$3 or decipher$3 or unencrypt$3 or unscrambl$3) near5 key$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 21:44
S84	1	"20120191615".pn. and ((symmetric$3 or asymmetric$4) near5 (crypto$5 or cryptanaly$3 or cipher$3 or cypher$3 or encrypt$3 or encipher$3 or scrambl$3 or decrypt$3 or decipher$3 or unencrypt$3 or unscrambl$3) near5 key$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 21:45
S85	22	(US-20150030156-$ or US-20060004772-$ or US-20100293382-$ or US-20110296440-$ or US-20120204032-$ or US-20120191615-$ or US-20110270748-$ or US-20100293381-$ or US-20100327054-$ or US-20120018506-$ or US-20050216421-$ or US-20030105725-$ or US-20120253810-$ or US-20110294478-$ or US-20110145152-$).did. or (US-7194618-$ or US-8094788-$ or US-7631193-$ or US-5613012-$ or US-5805719-$ or US-7216109-$ or US-9338287-$).did.	US-PGPUB; USPAT	OR	OFF	2020/08/01 21:47
S86	17	S85 and ((symmetric$3 or asymmetric$4) near5 (crypto$5 or cryptanaly$3 or cipher$3 or cypher$3 or encrypt$3 or encipher$3 or scrambl$3 or decrypt$3 or decipher$3 or unencrypt$3 or unscrambl$3) near5 key$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 21:47
S87	17	S86 and ((phone or telephone) adj2 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 21:47
S88	8	S87 and (caller or calling)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	ON	2020/08/01 21:49

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S89	3	"9338287".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 21:53
S90	22	(US-20150030156-$ or US-20060004772-$ or US-20100293382-$ or US-20110296440-$ or US-20120204032-$ or US-20120191615-$ or US-20110270748-$ or US-20100293381-$ or US-20100327054-$ or US-20120018506-$ or US-20050216421-$ or US-20030105725-$ or US-20120253810-$ or US-20110294478-$ or US-20110145152-$).did. or (US-7194618-$ or US-8094788-$ or US-7631193-$ or US-5613012-$ or US-5805719-$ or US-7216109-$ or US-9338287-$).did.	US-PGPUB; USPAT	OR	OFF	2020/08/02 21:39
S91	19	S90 and ((valid$5 or fail$4 or match$4 or author$7) near5 (calling or user or caller))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/02 21:43
S92	3	S90 and ((confirm$4 or assur$4) near5 (valid$5 or fail$4 or match$4 or author$7) near5 (calling or user or caller))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/02 22:02
S93	3	S90 and ((confirm$4 or assur$4 or feedback) near5 (valid$5 or fail$4 or match$4 or author$7) near5 (calling or user or caller))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/02 22:02
S94	20	S90 and ((feedback or assuranc$4 or valid$5 or fail$4 or match$4 or author$7) near5 (calling or user or caller))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	ON	2020/08/02 22:03

			DERWENT; IBM_TDB			
S95	13	S90 and ((feedback or assuranc$4 or inform$4 or notif$5) near5 (calling or user or caller))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/02 22:21
S96	2,938	(valid$4 or authenticat$4 or verif$5 or validat$3 or identif$3 or authoriz$3 or authoris$3 or fingerpring or print or password or passcode or (pass adj code) or (pass adj word) or key) same ((telephone or phone) near3 number) same device same ((feedback or assuranc$4 or inform$4 or notif$5) near5 (calling or user or caller))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/02 22:26
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S117	3	"9338287".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/03 09:50

EAST Search History (Interference)

<This search history is empty>

8/3/2020 11:51:48 AM
C:\Users\ateshale\Documents\EAST\Workspaces\16785423.wsp

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/785,423	02/07/2020	Bjorn Markus Jakobsson	MJAKP016C2	9490

21912 7590 08/07/2020
VAN PELT, YI & JAMES LLP
10050 N. FOOTHILL BLVD #200
CUPERTINO, CA 95014

EXAMINER	
TESHALE, AKELAW	

ART UNIT	PAPER NUMBER
2653	

NOTIFICATION DATE	DELIVERY MODE
08/07/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptocorrespondence@ip-patent.com

Office Action Summary	**Application No.** 16/785,423	**Applicant(s)** Jakobsson, Bjorn Markus	
	Examiner AKELAW A TESHALE	**Art Unit** 2653	**AIA (FITF) Status** Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 07/15/2020.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 2-29 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 2-29 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☑ The drawing(s) filed on 02/07/2020 is/are: a)☑ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS, AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0280

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

2. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. **Claim 2-29** are rejected under 35 U.S.C. 103 as being unpatentable over U.S Patent No. 9,338,287 B1 to Russo in view of U.S Pub No. 20100054443 A1 Bhattiprolu et al. (hereinafter "Bhattiprolu").

Regarding **claim 2**, Russo discloses a system, comprising: one or more processors configured to:

receive information pertaining to a call initiated by a calling device (Abstract and column 3, lines 36-44; call server 114 comprises processor-executable instructions for placing and/or receiving telephone calls), the information pertaining to the call including:

(1) a value generated based at least in part on information associated with the calling device, and (2) a score generated for the calling device, the score indicating a validity of a phone number (Abstract , column 3, lines 21-35 and column 4, lines 29-40; system and method for automatically verifying a telephone number proffered by a user of an application. During registration or installation of the application, client software is installed on the user's mobile device);

perform a security determination based at least in part on the score generated for the calling device, and at least in part by verifying the value included in the information pertaining to the call initiated by the calling device (Abstract, column 3, lines 21-35 and column 5, lines 23-43 ; verifying a telephone number identified by the user and associated with one or both of devices 104, 106. The client software installed on the device may assist in the verification of the telephone number); and a memory coupled to the one or more processors and configured to provide the one or more processors with instructions (column 3, lines 27-58 and column 8, lines 31-36).

However, Russo does not explicitly discloses based at least in part on the security determination, perform at least one of, conveying an assurance to a user or conveying a failure to confirm to the user.

In the same field of endeavor, Bhattiprolu discloses based the security determination, perform conveying a failure to confirm to the user (Abstract, paragraphs [0017] and [0032]; If the calling phone number is on the list of phone numbers associated with the first user, then the caller is notified that the target phone number is no longer associated with the first user).

At the time of the effective filing date of the invention, it would have been obvious to a person of ordinary skilled in the art to modify Endo's teaching with a feature of sound source being selected and having a controlled volume in response to a user gesture on a touch screen of the portable terminal as taught by Bhattiprolu in order to screening phone calls, and more particularly to screen phone calls where a user has a phone number that was previously associated with a different user (paragraph [0001], Bhattiprolu).

Regarding **claim 3**, Russo discloses the system recited in claim 2 wherein the information associated with the calling device is stored at an entity external to the calling device (column 3, lines 27-58 and column 8, lines 31-36).

Regarding **claim 4**, Russo discloses the system recited in claim 2 wherein the information associated with the calling device comprises a cryptographic key associated with the calling device (column 1, lines 10-25).

Regarding **claim 5**, Russo discloses the system recited in claim 2 wherein the value is generated based at least in part on one of symmetric key cryptography and asymmetric key cryptography (column 1, lines 10-25).

Regarding **claim 8**, Russo discloses the system recited in claim 2 wherein the score for the calling device is generated in response to the call being initiated by the calling device (Abstract , column 3, lines 21-35 and column 4, lines 29-40).

Regarding **claim 9**, Russo discloses the system recited in claim 2, wherein the score for the calling device is generated based at least in part on information associated with a user that is associated with the calling device (Abstract , column 3, lines 21-35 and column 4, lines 29-40).

Regarding **claim 10**, Russo discloses the system recited in claim 2 wherein the information pertaining to the call further includes at least one of a timestamp associated with the call and a called phone number (Abstract and column 5, lines 33-43).

Regarding **claim 11**, Russo discloses the system recited in claim 2 wherein the security determination is performed by one of a device associated with a called phone number and an entity different from the device associated with a called phone number.

Regarding **claim 12**, Russo discloses the system recited in claim 2 wherein the security determination comprises determining a validity of the call based at least in part on a cryptographic key on the calling device (column 7, lines 20-25).

Regarding **claim 13**, Russo discloses the system recited in claim 2 wherein the information pertaining to the call further includes a timestamp, and wherein the one or more processors are configured to prevent a replay attack using the timestamp (Abstract and column 5, lines 33-43).

Regarding **claim 14**, Russo discloses the system recited in claim 2 wherein the security determination is based at least in part on a score indicating a validity of the call, and wherein the score is generated based at least in part on device information (Abstract , column 3, lines 21-35 and column 4, lines 29-40).

Regarding **claim 15**, Russo discloses the system recited in claim 14 wherein the device information used to generate the score comprises at least one of a unique software identifier, a semi-unique software identifier, an embedded hardware identifier, a user-added hardware identifier, and a device fingerprint (column 1, lines 40-48 and column 2, lines 11-27).

Regarding **claim 16**, Russo discloses the system recited in claim 15 wherein the user-added hardware identifier is associated with geolocation information (column 4, lines 61-67; user's location).

Regarding **claim 17**, Russo discloses the system recited in claim 15 wherein the device fingerprint is determined based at least in part on at least one of a set of device settings, a set of installed applications, an indication of a software version, and a contact list (Abstract , column 3, lines 21-35 and column 4, lines 29-40).

Regarding **claim 18**, Russo discloses the system recited in claim 2 wherein the one or more processors are configured to confirm an observed phone number associated with the call (Abstract , column 3, lines 21-35 and column 4, lines 29-40).

Regarding **claim 19**, Russo discloses the system recited in claim 2 wherein the information associated with the call is provided by an agent on the calling device (Abstract, column 3, lines 21-35 and column 5, lines 23-43).

Regarding **claim 20**, Russo discloses the system recited in claim 2 wherein the information associated with the call is provided in response to one of a detection of an outgoing communication and a prompt to validate communication session information (Abstract , column 3, lines 21-35 and column 4, lines 29-40).

Claim 21 is a method claim correspond to system claim 2. Therefore, claim 21 has been analyzed and rejected based on system claim 2.

Claim 22 is a non-transitory computer readable storage medium claim correspond to system claim 2. Therefore, claim 22 has been analyzed and rejected based on system claim 2.

Regarding **claim 23**, Russo discloses the system recited in claim 2 wherein the score is based at least in part on an age of the information associated with the calling device (Abstract , column 3, lines 21-35 and column 4, lines 29-40).

Regarding **claim 24**, Russo discloses the system recited in claim 2 wherein the score is based at least in part on one or more of feedback associated with a particular phone call, an indication of a stolen device, an indication of a potential spoof attempt, an indication of fraud related to a device, or an indication of a verification that was subsequently determined to be errant (Abstract , column 3, lines 21-35 and column 4, lines 29-40).

Regarding **claim 25**, Russo discloses the system recited in claim 2 wherein the score comprises a reputation score (Abstract, column 3, lines 21-35 and column 5, lines 23-43).

Regarding **claim 26**, Russo discloses the system recited in claim 15 wherein the user-added hardware identifier is associated with a memory card (column 3, lines 27-58 and column 8, lines 31-36).

Regarding **claim 27**, Russo discloses the system recited in claim 2 wherein the value is generated at least in part by the calling device (Abstract and column 3, lines 36-44).

Regarding **claim 28**, Russo discloses the system recited in claim 2 wherein the value is provided at least in part by an entity different from the calling device (Abstract and column 3, lines 36-44).

Regarding **claim 29**, Russo discloses the system recited in claim 2 wherein the value comprises at least one of an authentication code, a counter value, a pseudo-random number, a number specific to a particular session, or a number specific to the calling device (Abstract , column 3, lines 21-35 and column 4, lines 29-40).

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to AKELAW A TESHALE whose telephone number is (571)270-5302. The examiner can normally be reached on 9 am -6pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on (571)272-7547. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see https://ppair-

my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AKELAW TESHALE
Primary Examiner
Art Unit 2653

/AKELAW TESHALE/
Primary Examiner, Art Unit 2653

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	16785423
Filing Date	2020-02-07
First Named Inventor	Bjorn Markus Jakobsson
Art Unit	2653
Examiner Name	Not Assigned
Attorney Docket Number	MJAKP016C2

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	9332022		2016-05-03	ASHLEY PETER	

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20100082758		2010-04-01	GOLAN TAL	
	2	20170085584		2017-03-23	GOUTAL SEBASTIEN	

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Filing Date	2020-02-07
First Named Inventor	Bjorn Markus Jakobsson
Art Unit	2653
Examiner Name	Not Assigned
Attorney Docket Number	MJAKP016C2

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		

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EXAMINER SIGNATURE

Examiner Signature	/AKELAW TESHALE/	Date Considered	08/03/2020

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Yeu-Ting George Cheng/	Date (YYYY-MM-DD)	2020-03-19
Name/Print	Yeu-Ting George Cheng	Registration Number	69408

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/785,423	Jakobsson, Bjorn Markus
	Examiner	Art Unit
	AKELAW A TESHALE	2653

CPC - Searched*		
Symbol	Date	Examiner
H04M3/42042, H04M3/382, H04W4/14, H04L63/0428, H04L63/08, H04L63/06,H04L63/0853	08/01/2020	AT

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Inventor name search (east)	07/31/2020	AT
east search (US-PGPUB;USPAT;USOCR;FPRS;EPO;JPO; DERWENT;IBM_TDB)	07/31/2020	AT
Please see east search attachment	08/03/2020	AT

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

/AKELAW TESHALE/ Primary Examiner, Art Unit 2653	

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS, AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0294

Bibliographic Data

Application No: 16/785,423

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☑ No ☐ Met After Allowance

Verified and Acknowledged: /AKELAW TESHALE/ Examiner's Signature | Initials

Title: VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
02/07/2020	379	2653	MJAKP016C2
RULE			

APPLICANTS

RightQuestion, LLC, Portola Valley, CA,

INVENTORS

Bjorn Markus Jakobsson, Portola Valley, CA, UNITED STATES

CONTINUING DATA

This application is a CON of 16180373 11/05/2018 PAT 10674009

16180373 is a CON of 14535064 11/06/2014 PAT 10694029

14535064 has PRO of 61901322 11/07/2013

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

02/25/2020

** SMALL ENTITY **

STATE OR COUNTRY

UNITED STATES

ADDRESS

VAN PELT, YI & JAMES LLP
10050 N. FOOTHILL BLVD #200
CUPERTINO, CA 95014
UNITED STATES

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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Attorney Docket Number	MJAKP016C2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

	1	ROBINSON et al., Caching Context Information in Persvasive System, MDS '06: Proceedings of the 3rd International Middleware doctoral Symposium. November 2006, PP 1 (Year: 2006)

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CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Yeu-Ting George Cheng/	Date (YYYY-MM-DD)	2020-04-20
Name/Print	Yeu-Ting George Cheng	Registration Number	69408

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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	2	6161130		2000-12-12	HORVITZ ERIC	
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	4	6721784		2004-04-13	LEONARD JON N	
	5	7293063		2007-11-06	SOBEL WILLIAM E	
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	10	7809796		2010-10-05	BLOCH ERIC	
	11	7814545		2010-10-12	OLIVER JONATHAN J	
	12	7831522		2010-11-09	SATISH SOURABH	
	13	7899213		2011-03-01	OTSUKA YUJI	
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	34	9060057		2015-06-16	DANIS SERDAR ARTUN	
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	43	9613341		2017-04-04	SHIVAKUMAR SHAILESH KUMAR	
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	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Akelaw Teshale
	Attorney Docket Number	MJAKP016C2

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A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Yeu-Ting George Cheng/	Date (YYYY-MM-DD)	2020-07-15
Name/Print	Yeu-Ting George Cheng	Registration Number	69408

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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Art Unit	2653
Examiner Name	Not Assigned
Attorney Docket Number	MJAKP016C2

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	1	8365258		2013-01-29	DISPENSA STEVEN	
	2	10122715		2018-11-06	DISPENSA STEPHEN T	

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	5	20090260064		2009-10-15	MCDOWELL JOEL RICHARD	
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	7	20130104198		2013-04-25	GRIM EVAN TYLER	
	8	20130185775		2013-07-18	DISPENSA STEPHEN T	

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Signature	/Yeu-Ting George Cheng/	Date (YYYY-MM-DD)	2020-04-03
Name/Print	Yeu-Ting George Cheng	Registration Number	69408

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Notice of References Cited	Application/Control No. 16/785,423	Applicant(s)/Patent Under Reexamination Jakobsson, Bjorn Markus	
	Examiner AKELAW A TESHALE	Art Unit 2653	Page 1 of 1

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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-9338287-B1	05-2016	Russo; Richard J.	H04W12/06	1/1
*	B	US-20100054443-A1	03-2010	Bhattiprolu; Sukadev	H04M3/38	379/211.02
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0337

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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	2	AUTHOR UNKNOWN, SpamKilling, "What is AntiSpam?", downloaded from "https://web.archive.org/web/20100411141933/http:/www.spamkilling.com:80/home_html.htm", April 11, 2010.
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	45	U.S. Provisional Patent Application No. 61/551,370 filed October 25, 2011

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EXAMINER SIGNATURE

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	Attorney Docket Number	MJAKP016C2

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

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A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Yeu-Ting George Cheng/	Date (YYYY-MM-DD)	2020-04-27
Name/Print	Yeu-Ting George Cheng	Registration Number	69408

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/785,423	Jakobsson, Bjorn Markus
	Examiner	**Art Unit**
	AKELAW A TESHALE	2653

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS											
☐ Claims renumbered in the same order as presented by applicant					☐ CPA		☐ T.D.		☐ R.1.47		
CLAIM		**DATE**									
Final	Original	08/03/2020									
	1	-									
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	5	✓									
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Examiner Signature	/AKELAW TESHALE/	Date Considered	08/03/2020

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	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
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See attached certification statement.

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☒ A certification statement is not submitted herewith.

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Signature	/Yeu-Ting George Cheng/	Date (YYYY-MM-DD)	2020-04-27
Name/Print	Yeu-Ting George Cheng	Registration Number	69408

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EFS ID:	40264629
Application Number:	16785423
International Application Number:	
Confirmation Number:	9490
Title of Invention:	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA
First Named Inventor/Applicant Name:	Bjorn Markus Jakobsson
Customer Number:	21912
Filer:	Yeu-Ting George Cheng/Elaine Nguyen
Filer Authorized By:	Yeu-Ting George Cheng
Attorney Docket Number:	MJAKP016C2
Receipt Date:	12-AUG-2020
Filing Date:	07-FEB-2020
Time Stamp:	15:05:07
Application Type:	Utility under 35 USC 111(a)

Payment information:

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1	Information Disclosure Statement (IDS) Form (SB08)	MJAKP016C2_IDS_08_SB08.pdf	1055749 21a2d768d16625d798791108d9b267602a4d0e14	no	9

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10	Non Patent Literature	TYAGI_et_al_Traceback_for_End_to_End_Encrypted_Messaging_.pdf	5219662 daf27917c45864b43c1df653508394ab0743f399	no	18
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	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Akelaw Teshale
	Attorney Docket Number	MJAKP016C2

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7464408		2008-12-09	SHAH BAKUL	
	2	7748038		2010-06-29	OLIVIER MICHAEL	
	3	7854007		2010-12-14	SPROSTS CRAIG	
	4	7941842		2011-05-10	PRINCE MATTHEW B	
	5	8214490		2012-07-03	VOS JACOB	
	6	8230505		2012-07-24	AHRENS DAVID	
	7	8667581		2014-03-04	STEEVES DAVID J	
	8	8769684		2014-07-01	STOLFO SALVATORE J	

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	9	8813228		2014-08-19	MAGEE JOSEPH C	
	10	8880604		2014-11-04	CHEN XIAO YAN	
	11	8904524		2014-12-02	HODGMAN ROY	
	12	9027134		2015-05-05	FOSTER JAMES C	
	13	9338026		2016-05-10	BANDINI JEAN-CHRISTOPHE DENIS	
	14	9491155		2016-11-08	JOHANSSON JESPER MIKAEL	
	15	9501639		2016-11-22	STOLFO SALVATORE J	
	16	9654492		2017-05-16	MAYLOR JACKIE	
	17	9781149		2017-10-03	HIMLER ALAN	
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	1	20030009694		2003-01-09	WENOCUR MICHAEL L	
	2	20030200108		2003-10-23	MALNOE MICHEL	
	3	20040073617		2004-04-15	MILLIKEN WALTER CLARK	
	4	20040148358		2004-07-29	SINGH TARVINDER P	
	5	20040215977		2004-10-28	GOODMAN JOSHUA T	
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	7	20050091320		2005-04-28	KIRSCH STEVEN	
	8	20050283837		2005-12-22	OLIVIER MICHAEL	
	9	20060037075		2006-02-16	FRATTURA DAVID E	
	10	20060161989		2006-07-20	RESHEF ERAN	

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	11	20060277259		2006-12-07	MURPHY ELISSA	
	12	20060282660		2006-12-14	VARGHESE THOMAS	
	13	20070078936		2007-04-05	QUINLAN DANIEL	
	14	20070079379		2007-04-05	SPROSTS CRAIG	
	15	20070208850		2007-09-06	LIN KUNHUA	
	16	20070289018		2007-12-13	STEEVES DAVID J	
	17	20090157708		2009-06-18	BANDINI JEAN-CHRISTOPHE DENIS	
	18	20100077483		2010-03-25	STOLFO SALVATORE J	
	19	20100095374		2010-04-15	GILLUM ELIOT C	
	20	20110214187		2011-09-01	WITTENSTEIN ANDREAS	
	21	20120084866		2012-04-05	STOLFO SALVATORE J	

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	22	20130263226		2013-10-03	SUDIA FRANK W	
	23	20140007238		2014-01-02	MAGEE JOSEPH C	
	24	20160012222		2016-01-14	STOLFO SALVATORE J	
	25	20170126661		2017-05-04	BRANNON JONATHAN BLAKE	
	26	20180091453		2018-03-29	JAKOBSSON BJORN MARKUS	
	27	20180131686		2018-05-10	BRANNON JONATHAN BLAKE	
	28	20180343246		2018-11-29	BENAYED MOHAMED KARIM	
	29	20190012478		2019-01-10	NARAYANASWAMY KRISHNA	
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	1	ADRIAN E. McELLIGOTT, "A Security pass for messages: message keys", CEAS '11: Proceedings of the 8th Annual Collaboration, Electronic messaging, Anti-abuse and Spam Conference. pp 184-192 (Year: 2011)	
	2	AKIN et al., "Efficient hardware implementations of high throughput SHA-3 candidates keccak, luffa and blue midnight wish for single- and multi-message hashing", SIN '10: Proceedings of the 3rd international conference on security of information and network. pp 168-177 (Year: 2010)	
	3	BINKLEY et al., "Improving identifier informativeness using part of speech information", MSR '11: Proceedings of the 8th Working Conference on Mining Software Repositories. May 2011, pp 203-206. (Year: 2011)	
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	5	LASZKA et al., "Integrity assurance in resource-bounded systems through stochastic message authentication", HotSoS '15: Proceedings of the 2015 Symposium and Bootcamp on the Science of security. April 2015, Article No.: 1, pp 1-12. https://doi.org/ (Year: 2015)	
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	7	PETERSON ET AL. "Authenticated Identity Management in the Session Initiation Protocol (SIP)". May 29, 2013. https://datatracker.ietf.org/doc/draft-jennings-dispatch-rfc4474bis/00/	
	8	Search Query Report from IP.com (performed 7/31/2020) (Year: 2020)	

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	9	TYAGI et al., "Traceback for End-to-End Encrypted Messaging" CCS '19: Proceeding of 2019 ACM SIGSAC Conference on Computer and Communications Security. pp 4134-430 (Year: 2019)

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Signature	/Yeu-Ting George Cheng/	Date (YYYY-MM-DD)	2020-08-12
Name/Print	Yeu-Ting George Cheng	Registration Number	69408

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Cancelled)

2. (Currently amended) A system, comprising:

one or more processors configured to:

receive information pertaining to a call initiated by a calling device, the information pertaining to the call including: (1) a value generated based at least in part on information associated with the calling device, and (2) a score generated for the calling device, the score indicating a validity of a phone number;

perform a security determination based at least in part on the score generated for the calling device, and at least in part by verifying the value included in the information pertaining to the call initiated by the calling device; and

based at least in part on the security determination, perform at least one of conveying an assurance to a callee associated with the call [[user]] or conveying a failure to confirm to the callee associated with the call [[user]]; and

a memory coupled to the one or more processors and configured to provide the one or more processors with instructions.

3. (Previously Presented) The system recited in claim 2 wherein the information associated with the calling device is stored at an entity external to the calling device.

4. (Previously Presented) The system recited in claim 2 wherein the information associated with the calling device comprises a cryptographic key associated with the calling device.

5. (Previously Presented) The system recited in claim 2 wherein the value is generated based at least in part on one of symmetric key cryptography and asymmetric key cryptography.

6. (Cancelled)

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7. (Cancelled)

8. (Previously Presented) The system recited in claim 2 wherein the score for the calling device is generated in response to the call being initiated by the calling device.

9. (Previously Presented) The system recited in claim 2, wherein the score for the calling device is generated based at least in part on information associated with a user that is associated with the calling device.

10. (Previously Presented) The system recited in claim 2 wherein the information pertaining to the call further includes at least one of a timestamp associated with the call and a called phone number.

11. (Previously Presented) The system recited in claim 2 wherein the security determination is performed by one of a device associated with a called phone number and an entity different from the device associated with a called phone number.

12. (Previously Presented) The system recited in claim 2 wherein the security determination comprises determining a validity of the call based at least in part on a cryptographic key on the calling device.

13. (Previously Presented) The system recited in claim 2 wherein the information pertaining to the call further includes a timestamp, and wherein the one or more processors are configured to prevent a replay attack using the timestamp.

14. (Previously Presented) The system recited in claim 2 wherein the security determination is based at least in part on a score indicating a validity of the call, and wherein the score is generated based at least in part on device information.

15. (Previously Presented) The system recited in claim 14 wherein the device information used to generate the score comprises at least one of a unique software identifier, a semi-unique software identifier, an embedded hardware identifier, a user-added hardware identifier, and a device fingerprint.

16. (Previously Presented) The system recited in claim 15 wherein the user-added hardware identifier is associated with geolocation information.

17. (Previously Presented) The system recited in claim 15 wherein the device

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fingerprint is determined based at least in part on at least one of a set of device settings, a set of installed applications, an indication of a software version, and a contact list.

18. (Previously Presented) The system recited in claim 2 wherein the one or more processors are configured to confirm an observed phone number associated with the call.

19. (Previously Presented) The system recited in claim 2 wherein the information associated with the call is provided by an agent on the calling device.

20. (Previously Presented) The system recited in claim 2 wherein the information associated with the call is provided in response to one of a detection of an outgoing communication and a prompt to validate communication session information.

21. (Currently amended) A method, comprising:

receiving information pertaining to a call initiated by a calling device, the information pertaining to the call including: (1) a value generated based at least in part on information associated with the calling device, and (2) a score generated for the calling device, the score indicating a validity of a phone number;

performing a security determination based at least in part on the score generated for the calling device, and at least in part by verifying the value included in the information pertaining to the call initiated by the calling device; and

based at least in part on the security determination, performing at least one of conveying an assurance to a callee associated with the call [[user]] or conveying a failure to confirm to the callee associated with the call [[user]].

22. (Currently amended) A computer program product embodied in a non-transitory computer readable storage medium and comprising computer instructions for:

receiving information pertaining to a call initiated by a calling device, the information pertaining to the call including: (1) a value generated based at least in part on information associated with the calling device, and (2) a score generated for the calling device, the score indicating a validity of a phone number;

performing a security determination based at least in part on the score generated for the calling device, and at least in part by verifying the value included in the information pertaining to the call initiated by the calling device; and

based at least in part on the security determination, performing at least one of conveying

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an assurance to a callee associated with the call [[user]] or conveying a failure to confirm to the callee associated with the call [[user]].

23. (Previously Presented) The system recited in claim 2 wherein the score is based at least in part on an age of the information associated with the calling device.

24. (Previously Presented) The system recited in claim 2 wherein the score is based at least in part on one or more of feedback associated with a particular phone call, an indication of a stolen device, an indication of a potential spoof attempt, an indication of fraud related to a device, or an indication of a verification that was subsequently determined to be errant.

25. (Previously Presented) The system recited in claim 2 wherein the score comprises a reputation score.

26. (Previously Presented) The system recited in claim 15 wherein the user-added hardware identifier is associated with a memory card.

27. (Previously Presented) The system recited in claim 2 wherein the value is generated at least in part by the calling device.

28. (Previously Presented) The system recited in claim 2 wherein the value is provided at least in part by an entity different from the calling device.

29. (Previously Presented) The system recited in claim 2 wherein the value comprises at least one of an authentication code, a counter value, a pseudo-random number, a number specific to a particular session, or a number specific to the calling device.

30. (New) The system recited in claim 2 wherein the security determination is performed based at least in part on evaluate of the score against a threshold score.

31. (New) The system recited in claim 2 wherein the score is based at least in part on an age of a timestamp.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.:	16/785,423	Examiner:	Akelaw Teshale
Filed:	February 07, 2020	Art Unit:	2653
Confirmation No.:	9490	Docket No.:	MJAKP016C2
First Inventor:	Bjorn Markus Jakobsson		
Title:	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA		

AMENDMENT C

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This is in response to the Office Action mailed August 07, 2020. The following amendment and remarks are respectfully submitted.

Applicant(s) believe that no (additional) fees are required beyond any fees submitted herewith. If required fees are missing or any additional fees are required during the pendency of the subject application, please charge such fees or credit any overpayment to Deposit Account No. 50-0685 (MJAKP016C2).

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INTERVIEW SUMMARY

A telephonic interview in the above-referenced case was conducted on November 5, 2020 between the Examiner and the Applicants' undersigned representative. The Office Action mailed on August 07, 2020 was discussed. Specifically, the rejections of Claims 2, 21, and 22 in light of Russo and Bhattiprolu and the proposed amendments set forth herein were discussed with the intent to place the claims in better condition for allowance or appeal.

The Applicants thank the Examiner for the interview.

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REMARKS

Claims 2, 21, and 22 have been amended to clarify the subject matter regarded as the invention. New Claims 30 and 31 have been added. Claims 2-5 and 8-31 are pending. No new subject matter has been added.

Claim Rejections – 35 U.S.C. §103

Claims 2-5 and 8-29 stand rejected under 35 U.S.C. §103 as being unpatentable over Russo (U.S. Pat. No. 9,338,287) in view of Bhattiprolu et al. (U.S. Pub. No. 2010/0054443). The rejection is respectfully traversed.

As amended, independent Claims 2, 21, and 22 each recite, in part, "based at least in part on the security determination, perform[ing] at least one of conveying an assurance to a callee associated with the call or conveying a failure to confirm to the callee associated with the call." Support for the amendments may be found, without limitation, in Paragraphs [0052] and [0056] of the Specification.

Neither Russo nor Bhattiprolu, whether considered individually or in combination, discloses such "perform[ing] at least one of conveying an assurance to a callee associated with the call or conveying a failure to confirm to the callee associated with the call" based at least in part on a security determination performed "based at least in part on the score generated for the calling device, and at least in part by verifying the value included in the information pertaining to the call initiated by the calling device."

Independent Claims 2, 21, and 22 are therefore believed to be allowable. The remaining claims depend, either directly or indirectly, from one of the aforementioned independent claims, and are therefore also believed to be allowable for the same reasons described above.

New Claims

Support for new Claim 30 may be found, without limitation, in Paragraph [0051] of the Specification.

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Support for new Claim 31 may be found, without limitation, in Paragraph [0047] of the Specification.

New Claims 30 and 31 depend from independent Claim 2, and are therefore also believed to be allowable for the same reasons described above.

The foregoing amendments are not to be taken as an admission of unpatentability of any of the claims prior to the amendments.

Reconsideration of the application and allowance of all claims are respectfully requested based on the preceding remarks. If at any time the Examiner believes that an interview would be helpful, please contact the undersigned.

Respectfully submitted,

Dated: November 9, 2020

/Yeu-Ting George Cheng/
Yeu-Ting George Cheng
Registration No. 69408
408-207-4765

VAN PELT, YI & JAMES LLP
10050 N. Foothill Blvd., Suite 200
Cupertino, CA 95014
Fax 408-973-2595

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Electronic Acknowledgement Receipt

EFS ID:	41076752
Application Number:	16785423
International Application Number:	
Confirmation Number:	9490
Title of Invention:	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA
First Named Inventor/Applicant Name:	Bjorn Markus Jakobsson
Customer Number:	21912
Filer:	Yeu-Ting George Cheng/Elaine Nguyen
Filer Authorized By:	Yeu-Ting George Cheng
Attorney Docket Number:	MJAKP016C2
Receipt Date:	09-NOV-2020
Filing Date:	07-FEB-2020
Time Stamp:	19:55:05
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$100
RAM confirmation Number	E2020A9J55265561
Deposit Account	500685
Authorized User	Elaine Nguyen
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.21 (Miscellaneous fees and charges) 37 CFR 1.20 (Post Issuance fees)	

37 CFR 1.19 (Document supply fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.16 (National application filing, search, and examination fees)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	MJAKP016C2_AMD_C.pdf	122095 cd31b64253e59bf270606becd4cc20802060490c	no	8
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30605 b672c9cc4ee28c406e9fa0e4865ada43f336aace	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	152700		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Electronic Patent Application Fee Transmittal

Application Number:	16785423
Filing Date:	07-Feb-2020
Title of Invention:	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA
First Named Inventor/Applicant Name:	Bjorn Markus Jakobsson
Filer:	Yeu-Ting George Cheng/Elaine Nguyen
Attorney Docket Number:	MJAKP016C2

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	2202	2	50	100
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**100**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/785,423	02/07/2020	Bjorn Markus Jakobsson	MJAKP016C2	9490

21912 7590 11/10/2020
VAN PELT, YI & JAMES LLP
10050 N. FOOTHILL BLVD #200
CUPERTINO, CA 95014

EXAMINER	
TESHALE, AKELAW	

ART UNIT	PAPER NUMBER
2653	

NOTIFICATION DATE	DELIVERY MODE
11/10/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptocorrespondence@ip-patent.com

Applicant-Initiated Interview Summary	**Application No.** 16/785,423	**Applicant(s)** Jakobsson, Bjorn Markus		
	Examiner AKELAW A TESHALE	**Art Unit** 2653	**AIA (First Inventor to File) Status** Yes	**Page** 1 of 1

All Participants (applicant, applicants representative, PTO personnel)	**Title**	**Type**
AKELAW A TESHALE	Primary Examiner	Telephonic
George Cheng	Attorney of Record	

Date of Interview: 05 November 2020

Issues Discussed:

35 U.S.C. 103

The examiner and applicant's representative discussed the difference of claim limitation and prior art rejection. Examiner agreed the proposed amendments would overcome the prior art rejection. Also,the examiner suggested that the claims be further amended to clarify the claim language such as "score" in claim 2. Applicant will file response accordingly.

/AKELAW TESHALE/ Primary Examiner, Art Unit 2653	

Applicant is reminded that a complete written statement as to the substance of the interview must be made of record in the application file. It is the applicants responsibility to provide the written statement, unless the interview was initiated by the Examiner and the Examiner has indicated that a written summary will be provided. See MPEP 713.04
Please further see:
MPEP 713.04
Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews, paragraph (b)
37 CFR § 1.2 Business to be transacted in writing

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

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AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	2	("20190387095").PN.	US-PGPUB; USPAT; USOCR; DERWENT	OR	OFF	2020/07/31 21:24
S2	8	((("RIGHTQUESTION") near3 ("LLC"))).AS,AANM.	USPAT	OR	OFF	2020/07/31 21:45
S3	265	((("JAKOBSSON") near3 ("Bjorn"))).INV.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/07/31 21:45
S4	267	S1 or S2 or S3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/07/31 21:47
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S12	570	S9 or S10 or S11	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 10:39
S13	275,692	(communication or connection$l or session or call$4) same ((telephone or phone) near3 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 11:23
S14	215,383	(valid$4 or authenticat$4 or verif$5 or validat$3 or identif$3 or authoriz$3 or authoris$3 or fingerpring or print or password or passcode or (pass adj code) or (pass adj word) or key) same ((telephone or phone) near3 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 11:45
S15	116,979	S13 same S14	US-PGPUB; USPAT; USOCR;	OR	OFF	2020/08/01 11:53

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
S16	36	S12 and S15	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 11:53
S17	8	((("RIGHTQUESTION") near3 ("LLC"))).AS,AANM.	USPAT	OR	OFF	2020/08/01 11:53
S18	265	((("JAKOBSSON") near3 ("Bjorn"))).INV.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/08/01 11:53
S19	265	S17 or S18	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 11:53
S20	17	S15 and S19	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 11:53
S21	3,475	S15 and ((symmetric$3 or mirror$4 or asymmetric$4) near5 (crypto$3 or cryptanaly$3 or cipher$3 or cypher$3 or encrypt$3 or encipher$3 or scrambl$3 or decrypt$3 or decipher$3 or unencrypt$3 or unscrambl$3 or key$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 12:21
S22	2	S12 and S21	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 12:21
S23	39,336	(symmetric$3 or mirror$4 or asymmetric$4) near5 (crypto$3 or cryptanaly$3 or cipher$3 or cypher$3	US-PGPUB; USPAT; USOCR;	OR	OFF	2020/08/01 12:23

		or encrypt$3 or encipher$3 or scrambl$3 or decrypt$3 or decipher$3 or unencrypt$3 or unscrambl$3) near5 key$3	FPRS; EPO; JPO; DERWENT; IBM_TDB			
S24	4,742	S23 and ((valid$4 or authenticat$4 or verif$5 or validat$3 or identif$3 or authoriz$3 or authoris$3) same ((telephone or phone) near3 number))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 12:25
S25	1,824	S24 and attack$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 12:29
S26	1	S12 and S25	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 12:29
S27	91,766	S15 same((valid$4 or authenticat$4 or verif$5 or validat$3 or identif$3 or authoriz$3 or authoris$3) same ((telephone or phone) near3 number))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 12:33
S28	91,766	S15 same ((valid$4 or authenticat$4 or verif$5 or validat$3 or identif$3 or authoriz$3 or authoris$3) same ((telephone or phone) near3 number))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 12:33
S29	1,963	S23 and S28	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 12:40
S30	1,963	S29 and ((valid$4 or authenticat$4 or verif$5 or validat$3 or identif$3 or authoriz$3 or authoris$3) same ((telephone or phone) near3 number))	US-PGPUB; USPAT; USOCR; FPRS; EPO;	OR	ON	2020/08/01 12:40

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S31	982	S30 and attack$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 12:41
S32	390	S31 and (valid$5 with number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 12:42
S34	900	S31 and (H04M3/42042 or H04M3/382 or H04W4/14 or H04L63/0428 OR H04L63/08 OR H04L63/06 OR H04L63/0853 OR H04L9/3247 OR H04L2209/80 OR H04L63/0838 OR H04L9/3234 OR H04L63/0435 OR H04L63/062 OR H04L63/126 OR H04L63/101 OR H04L63/083 OR H04L67/12 OR H04L9/0819 OR H04L9/0869 OR H04L9/3271 OR H04L63/0442 OR H04L63/10 OR H04L63/123 OR H04L63/18 OR H04L9/14 OR H04L63/0823 OR H04L9/0894 OR H04L2209/24 OR H04L2209/56 OR H04L2209/805 OR H04L63/102 OR H04L67/06 OR H04L9/0866 OR H04L9/088 OR H04L9/0891 OR H04L9/3231 OR H04L2209/12 OR H04L63/0815 OR H04L63/0884 OR H04L63/20 OR H04L67/04 OR H04L9/10 OR H04L9/321 OR H04L63/0272 OR H04L63/0421 OR H04L63/0846 OR H04L63/0876 OR H04L63/145 OR H04L67/02 OR H04L67/1097 OR H04L67/125 OR H04L9/0861 OR H04L9/3226 OR H04L9/3228 OR H04L9/3239 OR H04L9/3273 OR H04L2463/061 OR H04L2463/102 OR H04L63/0464 OR H04L63/0807 OR H04L63/0861 OR H04L67/10 OR H04L67/18 OR H04L67/22 OR H04L67/303 OR H04L9/0625 OR H04L9/0643 OR H04L9/0662 OR	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 13:16

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S35	371	S32 and (H04M3/42042 or H04M3/382 or H04W4/14 or H04L63/0428 OR H04L63/08 OR H04L63/06 OR H04L63/0853 OR H04L9/3247 OR H04L2209/80 OR H04L63/0838 OR H04L9/3234 OR H04L63/0435 OR H04L63/062 OR H04L63/126 OR H04L63/101 OR H04L63/083 OR H04L67/12 OR H04L9/0819 OR H04L9/0869 OR H04L9/3271 OR H04L63/0442 OR H04L63/10 OR H04L63/123 OR H04L63/18 OR H04L9/14 OR H04L63/0823 OR H04L9/0894 OR H04L2209/24 OR H04L2209/56 OR H04L2209/805 OR H04L63/102 OR H04L67/06 OR H04L9/0866 OR H04L9/088 OR H04L9/0891 OR H04L9/3231 OR H04L2209/12 OR H04L63/0815 OR H04L63/0884 OR H04L63/20 OR H04L67/04 OR H04L9/10 OR H04L9/321 OR H04L63/0272 OR H04L63/0421 OR H04L63/0846 OR H04L63/0876 OR H04L63/145 OR H04L67/02 OR H04L67/1097 OR H04L67/125 OR H04L9/0861 OR H04L9/3226 OR H04L9/3228 OR H04L9/3239 OR H04L9/3273 OR H04L2463/061 OR H04L2463/102 OR H04L63/0464 OR H04L63/0807 OR H04L63/0861 OR H04L67/10 OR H04L67/18 OR H04L67/22 OR H04L67/303 OR H04L9/0625 OR H04L9/0643 OR H04L9/0662 OR H04L9/0825 OR H04L9/085 OR H04L9/3213 OR H04L9/3263 OR H04L9/34 OR H04L12/28 OR H04L2012/2841 OR H04L2209/38 OR H04L2209/64 OR H04L2209/84 OR	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 13:16

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S36	158	S31 and (valid$5 near3 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 13:21
S37	22	S31 and (valid$5 near3 ((phone or telephone) adj2 number))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 13:37
S38	158	S36 and ((phone or telephone) adj2 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 13:38
S39	31	S38 and (timestamp pr (time adj stamp))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 13:40
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S42	3	"20150063552".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 15:07
S43	18	(US-20150030156-$ or US-20060004772-$ or US-20100293382-$	US-PGPUB; USPAT	OR	OFF	2020/08/01 15:09

		or US-20110296440-$ or US-20120204032-$ or US-20120191615-$ or US-20110270748-$ or US-20100293381-$ or US-20100327054-$ or US-20120018506-$ or US-20050216421-$ or US-20030105725-$).did. or (US-7194618-$ or US-8094788-$ or US-7631193-$ or US-5613012-$ or US-5805719-$ or US-7216109-$).did.				
S44	0	S43 and (valid$5 near3 ((phone or telephone) adj2 number))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 15:09
S45	18	(US-20150030156-$ or US-20060004772-$ or US-20100293382-$ or US-20110296440-$ or US-20120204032-$ or US-20120191615-$ or US-20110270748-$ or US-20100293381-$ or US-20100327054-$ or US-20120018506-$ or US-20050216421-$ or US-20030105725-$).did. or (US-7194618-$ or US-8094788-$ or US-7631193-$ or US-5613012-$ or US-5805719-$ or US-7216109-$).did.	US-PGPUB; USPAT	OR	OFF	2020/08/01 16:55
S46	39,293	(symmetric$3 or asymmetric$4) near5 (crypto$5 or cryptanaly$3 or cipher$3 or cypher$3 or encrypt$3 or encipher$3 or scrambl$3 or decrypt$3 or decipher$3 or unencrypt$3 or unscrambl$3) near5 key$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 16:55
S47	17	S45 and S46	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 16:57
S48	17	S47 and ((phone or telephone) adj2 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 16:59

S49	12	S48 and ((valid$4 or authenticat$4 or verif$5 or validat$3 or identif$3 or authoriz$3 or authoris$3) with ((phone or telephone) adj2 number))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 17:00
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S55	570	S52 or S53 or S54	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 17:45
S56	18	(US-20150030156-$ or US-20060004772-$ or US-20100293382-$ or US-20110296440-$ or US-20120204032-$ or US-20120191615-$ or US-20110270748-$ or US-20100293381-$ or US-20100327054-$ or US-20120018506-$ or US-20050216421-$ or US-20030105725-$).did. or (US-7194618-$ or US-8094788-$ or US-7631193-$ or US-5613012-$ or US-5805719-$ or US-7216109-$).did.	US-PGPUB; USPAT	OR	OFF	2020/08/01 17:45
S57	275,692	(communication or connection$l or session or call$4) same ((telephone or phone) near3 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 17:48
S58	215,383	(valid$4 or authenticat$4 or verif$5 or validat$3 or identif$3 or authoriz$3 or authoris$3 or fingerpring or print or password or passcode or (pass adj code) or (pass adj word) or key) same ((telephone or phone) near3 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 17:48
S59	116,979	S57 same S58	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 17:48
S60	59,678	S57 same ((convey$4 or notify$4 or deliver$4 or notif$4 or inform$4 or communicat$4 or report$4) near5 (user or caller or calling or party))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	OFF	2020/08/01 17:49

			DERWENT; IBM_TDB			
S62	59,678	S60 same ((convey$4 or notify$4 or deliver$4 or notif$4 or inform$4 or communicat$4 or report$4) near5 (user or caller or calling or party))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 17:50
S63	586	S55 or S56	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 17:50
S66	29,691	S62 same device	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 17:51
S67	17	S63 and S66	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 17:52
S68	3	"9338287".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 19:07
S69	22	(US-20150030156-$ or US-20060004772-$ or US-20100293382-$ or US-20110296440-$ or US-20120204032-$ or US-20120191615-$ or US-20110270748-$ or US-20100293381-$ or US-20100327054-$ or US-20120018506-$ or US-20050216421-$ or US-20030105725-$ or US-20120253810-$ or US-20110294478-$ or US-20110145152-$).did. or (US-7194618-$ or US-8094788-$ or US-7631193-$ or US-	US-PGPUB; USPAT	OR	OFF	2020/08/01 19:08

		5613012-$ or US-5805719-$ or US-7216109-$ or US-9338287-$).did.				
S70	121,228	device with ((telephone or phone) near3 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 19:09
S71	15	S69 and S70	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 19:10
S72	44	S63 and S70	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 19:12
S73	10	S46 and S72	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 19:12
S74	3	"9060057".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 19:41
S75	22	(US-20150030156-$ or US-20060004772-$ or US-20100293382-$ or US-20110296440-$ or US-20120204032-$ or US-20120191615-$ or US-20110270748-$ or US-20100293381-$ or US-20100327054-$ or US-20120018506-$ or US-20050216421-$ or US-20030105725-$ or US-20120253810-$ or US-20110294478-$ or US-20110145152-$).did. or (US-7194618-$ or US-8094788-$ or US-7631193-$ or US-	US-PGPUB; USPAT	OR	OFF	2020/08/01 20:51

		5613012-$ or US-5805719-$ or US-7216109-$ or US-9338287-$).did.				
S76	89,517	(valid$4 or authenticat$4 or verif$5 or validat$3 or identif$3 or authoriz$3 or authoris$3 or fingerpring or print or password or passcode or (pass adj code) or (pass adj word) or key) same ((telephone or phone) near3 number) same device	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 20:51
S77	17	S75 and S76	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 20:55
S78	12	S77 and ((symmetric$3 or asymmetric$4) near5 (crypto$5 or cryptanaly$3 or cipher$3 or cypher$3 or encrypt$3 or encipher$3 or scrambl$3 or decrypt$3 or decipher$3 or unencrypt$3 or unscrambl$3) near5 key$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 20:56
S79	12	S78 and ((phone or telephone) adj2 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 21:12
S80	0	"9338287".pn. and ((symmetric$3 or asymmetric$4) near5 (crypto$5 or cryptanaly$3 or cipher$3 or cypher$3 or encrypt$3 or encipher$3 or scrambl$3 or decrypt$3 or decipher$3 or unencrypt$3 or unscrambl$3) near5 key$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 21:44
S81	0	"9325839".pn. and ((symmetric$3 or asymmetric$4) near5 (crypto$5 or cryptanaly$3 or cipher$3 or cypher$3 or encrypt$3 or encipher$3 or scrambl$3 or decrypt$3 or decipher$3 or unencrypt$3 or unscrambl$3) near5 key$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/01 21:44
S82	0	"9338287".pn. and ((symmetric$3 or asymmetric$4) near5 (crypto$5 or cryptanaly$3 or cipher$3 or cypher$3 or encrypt$3 or encipher$3 or scrambl$3 or decrypt$3 or decipher$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	ON	2020/08/01 21:44

		or unencrypt$3 or unscrambl$3) near5 key$3)	DERWENT; IBM_TDB			
S83	0	"9325839".pn. and ((symmetric$3 or asymmetric$4) near5 (crypto$5 or cryptanaly$3 or cipher$3 or cypher$3 or encrypt$3 or encipher$3 or scrambl$3 or decrypt$3 or decipher$3 or unencrypt$3 or unscrambl$3) near5 key$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 21:44
S84	1	"20120191615".pn. and ((symmetric$3 or asymmetric$4) near5 (crypto$5 or cryptanaly$3 or cipher$3 or cypher$3 or encrypt$3 or encipher$3 or scrambl$3 or decrypt$3 or decipher$3 or unencrypt$3 or unscrambl$3) near5 key$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 21:45
S85	22	(US-20150030156-$ or US-20060004772-$ or US-20100293382-$ or US-20110296440-$ or US-20120204032-$ or US-20120191615-$ or US-20110270748-$ or US-20100293381-$ or US-20100327054-$ or US-20120018506-$ or US-20050216421-$ or US-20030105725-$ or US-20120253810-$ or US-20110294478-$ or US-20110145152-$).did. or (US-7194618-$ or US-8094788-$ or US-7631193-$ or US-5613012-$ or US-5805719-$ or US-7216109-$ or US-9338287-$).did.	US-PGPUB; USPAT	OR	OFF	2020/08/01 21:47
S86	17	S85 and ((symmetric$3 or asymmetric$4) near5 (crypto$5 or cryptanaly$3 or cipher$3 or cypher$3 or encrypt$3 or encipher$3 or scrambl$3 or decrypt$3 or decipher$3 or unencrypt$3 or unscrambl$3) near5 key$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 21:47
S87	17	S86 and ((phone or telephone) adj2 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 21:47
S88	8	S87 and (caller or calling)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	ON	2020/08/01 21:49

			DERWENT; IBM_TDB			
S89	3	"9338287".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/01 21:53
S90	22	(US-20150030156-$ or US-20060004772-$ or US-20100293382-$ or US-20110296440-$ or US-20120204032-$ or US-20120191615-$ or US-20110270748-$ or US-20100293381-$ or US-20100327054-$ or US-20120018506-$ or US-20050216421-$ or US-20030105725-$ or US-20120253810-$ or US-20110294478-$ or US-20110145152-$).did. or (US-7194618-$ or US-8094788-$ or US-7631193-$ or US-5613012-$ or US-5805719-$ or US-7216109-$ or US-9338287-$).did.	US-PGPUB; USPAT	OR	OFF	2020/08/02 21:39
S91	19	S90 and ((valid$5 or fail$4 or match$4 or author$7) near5 (calling or user or caller))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/02 21:43
S92	3	S90 and ((confirm$4 or assur$4) near5 (valid$5 or fail$4 or match$4 or author$7) near5 (calling or user or caller))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/02 22:02
S93	3	S90 and ((confirm$4 or assur$4 or feedback) near5 (valid$5 or fail$4 or match$4 or author$7) near5 (calling or user or caller))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/02 22:02
S94	20	S90 and ((feedback or assuranc$4 or valid$5 or fail$4 or match$4 or author$7) near5 (calling or user or caller))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	ON	2020/08/02 22:03

			DERWENT; IBM_TDB			
S95	13	S90 and ((feedback or assuranc$4 or inform$4 or notif$5) near5 (calling or user or caller))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/02 22:21
S96	2,938	(valid$4 or authenticat$4 or verif$5 or validat$3 or identif$3 or authoriz$3 or authoris$3 or fingerpring or print or password or passcode or (pass adj code) or (pass adj word) or key) same ((telephone or phone) near3 number) same device same ((feedback or assuranc$4 or inform$4 or notif$5) near5 (calling or user or caller))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/02 22:26
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S106	570	S103 or S104 or S105	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/02 22:49
S107	2	S106 and (call$4 with (timestamp or (time adj stamp)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/02 22:50
S108	2	S106 and (call$4 with (timestamp or (time adj stamp)))	US-PGPUB; USPAT;	OR	ON	2020/08/02 22:59

			USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S111	22	(US-20150030156-$ or US-20060004772-$ or US-20100293382-$ or US-20110296440-$ or US-20120204032-$ or US-20120191615-$ or US-20110270748-$ or US-20100293381-$ or US-20100327054-$ or US-20120018506-$ or US-20050216421-$ or US-20030105725-$ or US-20120253810-$ or US-20110294478-$ or US-20110145152-$).did. or (US-7194618-$ or US-8094788-$ or US-7631193-$ or US-5613012-$ or US-5805719-$ or US-7216109-$ or US-9338287-$).did.	US-PGPUB; USPAT	OR	OFF	2020/08/02 23:00
S112	44	(US-20150030156-$ or US-20060004772-$ or US-20100293382-$ or US-20110296440-$ or US-20120204032-$ or US-20120191615-$ or US-20110270748-$ or US-20100293381-$ or US-20100327054-$ or US-20120018506-$ or US-20050216421-$ or US-20030105725-$ or US-20120253810-$ or US-20110294478-$ or US-20110145152-$).did. or (US-7194618-$ or US-8094788-$ or US-7631193-$ or US-5613012-$ or US-5805719-$ or US-7216109-$ or US-9338287-$).did.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/08/02 23:00
S113	0	S112 and (call$4 with (timestamp or (time adj stamp)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/08/02 23:01
S115	10	((("RIGHTQUESTION") near3 ("LLC"))).AS,AANM.	USPAT	OR	OFF	2020/12/30 11:20
S116	275	((("JAKOBSSON") near3 ("Bjorn"))).INV.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/12/30 11:20
S117	22	(US-20150030156-$ or US-20060004772-$ or US-20100293382-$ or US-20110296440-$ or US-	US-PGPUB; USPAT	OR	OFF	2020/12/30 11:20

		20120204032-$ or US-20120191615-$ or US-20110270748-$ or US-20100293381-$ or US-20100327054-$ or US-20120018506-$ or US-20050216421-$ or US-20030105725-$ or US-20120253810-$ or US-20110294478-$ or US-20110145152-$).did. or (US-7194618-$ or US-8094788-$ or US-7631193-$ or US-5613012-$ or US-5805719-$ or US-7216109-$ or US-9338287-$).did.				
S119	275	S115 or S116	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/30 11:20
S121	86,401	((decoder or cryptovariable or cryptovariables or variable or passcode or Password or key or passkey or value) near5 (equipment or device or terminal or endpoint or apparatus or unit or system or unit or station)) with call$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/30 13:21
S122	12,816	S121 same ((feedback or assuranc$4 or valid$5 or fail$4 or match$4 or author$7 or warrant$5 or guarant$5 or alert$4 or notif$5 or inform$5 or report$4) near5 (callee or called or recipient or receiv$5 or user or party))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/30 13:22
S123	4,390	S122 same (privacy or security or valid$4 or identif$5 or access or threat$5 or risk$3 or invad$3 or invasion or danger or hack$3 or intrud$3 or intrusion)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/30 13:28
S125	172,739	(((valid$4 or authenticat$4 or verif$5 or validat$3 or identif$3 or authoriz$3 or authoris$3 or fingerpring or print or password or passcode or (pass adj code) or (pass adj word) or key) or passcode or key or passkey or value) near5 (equipment or device or terminal or endpoint or apparatus or unit or system or unit or station)) with call$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/30 13:46

S126	39,271	S125 same ((feedback or assuranc$4 or valid$5 or fail$4 or match$4 or author$7 or warrant$5 or guarant$5 or alert$4 or notif$5 or inform$5 or report$4) near5 (callee or called or recipient or receiv$5 or user or party))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/30 13:49
S127	172,739	((valid$4 or authenticat$4 or verif$5 or validat$3 or identif$3 or authoriz$3 or authoris$3 or fingerpring or print or password or passcode or (pass adj code) or (pass adj word) or key or passkey or value) near5 (equipment or device or terminal or endpoint or apparatus or unit or system or unit or station)) with call$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/30 13:51
S128	39,271	S127 same ((feedback or assuranc$4 or valid$5 or fail$4 or match$4 or author$7 or warrant$5 or guarant$5 or alert$4 or notif$5 or inform$5 or report$4) near5 (callee or called or recipient or receiv$5 or user or party))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/30 13:53
S129	74,445	(((password or passcode or (pass adj code) or (pass adj word) or key) or passcode or key or passkey or value) near5 (equipment or device or terminal or endpoint or apparatus or unit or system or unit or station)) with call$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/30 13:55
S130	11,845	S129 same ((feedback or assuranc$4 or valid$5 or fail$4 or match$4 or author$7 or warrant$5 or guarant$5 or alert$4 or notif$5 or inform$5 or report$4) near5 (callee or called or recipient or receiv$5 or user or party))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/30 13:57
S131	4	S119 and S130	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/12/30 13:59
S132	504	("20170195310" | "20020138271" | "20030225850" | "20030236845" | "20050188045" | "20060031306" | "20060195542" | "20060253597" | "20070086592" | "20070214495" | "20070276907" | "20090292781" |	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	OFF	2020/12/30 14:30

		"20100198928" | "20100257222" | "20100299399" | "20110066687" | "20130305318" | "20140230061" | "20140245396" | "20140250506" | "20150033343" | "20150067833" | "20150148006" | "20150172233" | "20170078321" | "7814545" | "8719940" | "8752172" | "9258314" | "9277049" | "20110061089" | "9338287" | "20030200108" | "20060037075" | "20060277259" | "20070078936" | "20070079379" | "20070208850" | "8667581" | "8904524" | "9491155" | "9781149" | "20100082758" | "20170085584" | "20090260064" | "20120253810" | "8365258" | "20030023736" | "20030229672" | "20050198173" | "20060026242" | "20060230461" | "20060259558" | "20070038718" | "20070067465" | "20070143432" | "20070239639" | "20090064330" | "20100030798" | "20100313253" | "20120246725" | "20130318580" | "20140366144" | "20150236990" | "20160225897" | "9154514" | "9471714" | "20100054443" | "20040073617" | "20050021649" | "20050091320" | "20060161989" | "20060282660" | "20090157708" | "20110214187" | "20190012478" | "9338026" | "20130185775" | "20040177120" | "20050076084" | "20050216587" | "20060085505" | "20060168329" | "20070101423" | "20070299916" | "20100094887" | "20120030293" | "20120136780" | "20120167233" | "20120278694" | "20130060905" | "20130346528" | "20140082726" | "20150030156" | "20150081722" | "20150326510" | "20160087925" | "20170091274" | "6721784" | "6073142" | "7299261" | "7899866" | "8255572" | "8676155" | "9613341" | "20200067861" | "8769684" | "10122715" | "20060053279" | "20070143407" | "20050235065" | "20060053490" | "20060206713" | "20060224677" | "20080004049" | "20080022107" | "20100043071" | "20100145900" | "20120227104" | "20130083129" | "20130128883" | "20150371212" |	DERWENT; IBM_TDB			

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S133	222	("20140214895" | "20140259158" | "20150216413" | "20150381653" | "7809795" | "9245115" | "9560506" | "20030009694" | "20040215977" | "20070289018" | "20180091453" | "8230505" | "8813228" | "8880604" | "20130104198" | "20050223076" | "20050257261" | "20060149821" | "20080050014" | "20090089859" | "20100115040" | "20100287246" | "20110191688" | "20120192258" | "20120311703" | "20130081142" | "20140258420" | "20150100896" | "20150156154" | "20150288714" | "20150363839" | "20170251006" | "6161130" | "7899213" | "8566938" | "8667069" | "8667074" | "8996042" | "9906554" | "9501639" | "20060101334" | "20070136573" | "20020184315" | "20040203589" | "20050188023" | "20060107323" |	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/12/30 14:31

		"20060265498" | "20070027992" | "20070130618" | "20070198642" | "20070271343" | "20080098237" | "20080178288" | "20090037350" | "20090210708" | "20090252159" | "20110191847" | "20110294478" | "20120242488" | "20130067012" | "20140340822" | "20160269437" | "20170331816" | "20170331824" | "6574658" | "7293063" | "7797752" | "7831522" | "8489689" | "8572184" | "9847973" | "20040148358" | "20100077483" | "20130263226" | "20140007238" | "20160012222" | "20180343246" | "8214490" | "9910984").PN.				
S134	22	(US-20150030156-$ or US-20060004772-$ or US-20100293382-$ or US-20110296440-$ or US-20120204032-$ or US-20120191615-$ or US-20110270748-$ or US-20100293381-$ or US-20100327054-$ or US-20120018506-$ or US-20050216421-$ or US-20030105725-$ or US-20120253810-$ or US-20110294478-$ or US-20110145152-$).did. or (US-7194618-$ or US-8094788-$ or US-7631193-$ or US-5613012-$ or US-5805719-$ or US-7216109-$ or US-9338287-$).did.	US-PGPUB; USPAT	OR	OFF	2020/12/30 14:35
S135	741	S132 or S133 or S134	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/12/30 14:36
S136	12	S130 and S135	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/12/30 14:36
S137	3,631	S130 and (H04M3/42042 or H04M3/382 or H04W4/14 OR H04M2201/40 OR H04M1/72541 OR H04M2203/253 OR H04M3/53333 OR H04M3/537 OR H04M7/12 OR H04M15/47 OR H04M1/663 OR H04M1/72538 OR H04M1/72544 OR	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/30 15:03

		H04M2203/6027 OR H04M2242/10 OR H04M3/2281 OR H04M3/42042 OR H04M3/42391 OR H04M3/436 OR H04M3/5183 OR H04M3/53366 OR H04M3/543 or H04M3/42042 or H04M3/382 or H04W4/14 or H04L63/0428 OR H04L63/08 OR H04L63/06 OR H04L63/0853 OR H04L9/3247 OR H04L2209/80 OR H04L63/0838 OR H04L9/3234 OR H04L63/0435 OR H04L63/062 OR H04L63/126 OR H04L63/101 OR H04L63/083 OR H04L67/12 OR H04L9/0819 OR H04L9/0869 OR H04L9/3271 OR H04L63/0442 OR H04L63/10 OR H04L63/123 OR H04L63/18 OR H04L9/14 OR H04L63/0823 OR H04L9/0894 OR H04L2209/24 OR H04L2209/56 OR H04L2209/805 OR H04L63/102 OR H04L67/06 OR H04L9/0866 OR H04L9/088 OR H04L9/0891 OR H04L9/3231 OR H04L2209/12 OR H04L63/0815 OR H04L63/0884 OR H04L63/20 OR H04L67/04 OR H04L9/10 OR H04L9/321 OR H04L63/0272 OR H04L63/0421 OR H04L63/0846 OR H04L63/0876 OR H04L63/145 OR H04L67/02 OR H04L67/1097 OR H04L67/125 OR H04L9/0861 OR H04L9/3226 OR H04L9/3228 OR H04L9/3239 OR H04L9/3273 OR H04L2463/061 OR H04L2463/102 OR H04L63/0464 OR H04L63/0807 OR H04L63/0861 OR H04L67/10 OR H04L67/18 OR H04L67/22 OR H04L67/303 OR H04L9/0625 OR H04L9/0643 OR H04L9/0662 OR H04L9/0825 OR H04L9/085 OR H04L9/3213 OR H04L9/3263 OR H04L9/34 OR H04L12/28 OR H04L2012/2841 OR H04L2209/38 OR H04L2209/64 OR H04L2209/84 OR H04L2463/062 OR H04L2463/082 OR H04L29/06 OR H04L51/10 OR H04L51/14 OR H04L51/28 OR H04L51/32 OR H04L61/20 OR H04L61/2539 OR H04L61/2596 OR H04L63/0281 OR H04L63/061 OR H04L63/105 OR H04L63/12 OR H04L63/1466 OR H04L63/164 OR H04L63/168 OR H04L63/30 OR H04L65/102 OR				

		H04L65/1069 OR H04L67/14 OR H04L69/12 OR H04L69/14 OR H04L9/006 OR H04L9/0637 OR H04L9/08 OR H04L9/0822 OR H04L9/0827 OR H04L9/083 OR H04L9/0838 OR H04L9/0841 OR H04L9/0847 OR H04L9/0863 OR H04L9/0877 OR H04L9/0897 OR H04L9/32 OR H04L9/3215 OR H04L9/3242 OR H04L9/3268 OR G06Q20/40 OR G06Q20/12 OR G06Q20/385 OR G06Q20/42 OR G06Q20/382 OR G06Q20/3821 OR G06Q20/4014 OR G06Q2220/00 OR G06Q20/32 OR G06Q20/3226 OR G06Q20/3674 OR G06Q20/38215 OR G06Q30/06 OR G06Q20/3829 OR G06Q20/425 OR G06Q20/10 OR G06Q20/322 OR G06Q20/401 OR G06Q20/4018 OR G06Q20/02 OR G06Q20/3227 OR G06Q20/4016 OR G06Q20/045 OR G06Q20/047 OR G06Q20/145 OR G06Q20/3223 OR G06Q20/325 OR G06Q20/327 OR G06Q20/352 OR G06Q20/367 OR G06Q20/409 OR G06Q20/341 OR G06Q50/24 OR G06Q20/105 OR G06Q20/20 OR G06Q20/3255 OR G06Q10/063 OR G06Q20/3278 OR G06Q20/354 OR G06Q20/36 OR G06Q20/3823 OR G06Q20/386 OR G06Q30/0201 OR G06Q30/0284 OR G06Q40/08 OR G06Q10/0635 OR G06Q10/107 OR G06Q20/085 OR G06Q20/18 OR G06Q20/202 OR G06Q20/206 OR G06Q20/342 OR G06Q20/4012 OR G06Q20/405 OR G06Q30/0215 OR G06Q30/0601 OR G06Q40/00 OR G06Q40/02 OR H04W12/06 OR H04W12/001 OR H04W12/0023 OR H04W12/004 OR H04W4/70 OR H04W8/18 OR H04W12/02 OR H04W12/04 OR H04W12/0609 OR H04W12/08 OR H04W12/12 OR H04W88/02 OR H04W12/0027 OR H04W12/0608 OR H04W12/10 OR H04W12/1206 OR H04W12/1208 OR H04W12/0013 OR H04W12/00503 OR H04W12/00504 OR H04W12/00508 OR H04W12/0401 OR H04W12/0802).CPC.				

S138	7,089	((generat$4 or creat$4 or produc$4) near5 (decoder or cryptovariable or cryptovariables or variable or passcode or Password or key or passkey or value) near5 (equipment or device or terminal or endpoint or apparatus or unit or system or unit or station)) with call$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/30 15:05
S139	826	S138 same ((feedback or assuranc$4 or valid$5 or fail$4 or match$4 or author$7 or warrant$5 or guarant$5 or alert$4 or notif$5 or inform$5 or report$4) near5 (callee or called or recipient or receiv$5 or user or party))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/30 15:06
S140	345	S139 same (privacy or security or valid$4 or identif$5 or access or threat$5 or risk$3 or invad$3 or invasion or danger or hack$3 or intrud$3 or intrusion or verif$5)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/30 15:07
S141	210	S140 and (H04M3/42042 or H04M3/382 or H04W4/14 OR H04M2201/40 OR H04M1/72541 OR H04M2203/253 OR H04M3/53333 OR H04M3/537 OR H04M7/12 OR H04M15/47 OR H04M1/663 OR H04M1/72538 OR H04M1/72544 OR H04M2203/6027 OR H04M2242/10 OR H04M3/2281 OR H04M3/42042 OR H04M3/42391 OR H04M3/436 OR H04M3/5183 OR H04M3/53366 OR H04M3/543 or H04M3/42042 or H04M3/382 or H04W4/14 or H04L63/0428 OR H04L63/08 OR H04L63/06 OR H04L63/0853 OR H04L9/3247 OR H04L2209/80 OR H04L63/0838 OR H04L9/3234 OR H04L63/0435 OR H04L63/062 OR H04L63/126 OR H04L63/101 OR H04L63/083 OR H04L67/12 OR H04L9/0819 OR H04L9/0869 OR H04L9/3271 OR H04L63/0442 OR H04L63/10 OR H04L63/123 OR H04L63/18 OR H04L9/14 OR H04L63/0823 OR H04L9/0894 OR H04L2209/24 OR H04L2209/56 OR H04L2209/805 OR H04L63/102 OR H04L67/06 OR H04L9/0866 OR H04L9/088 OR H04L9/0891 OR	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/30 15:47

		H04L9/3231 OR H04L2209/12 OR H04L63/0815 OR H04L63/0884 OR H04L63/20 OR H04L67/04 OR H04L9/10 OR H04L9/321 OR H04L63/0272 OR H04L63/0421 OR H04L63/0846 OR H04L63/0876 OR H04L63/145 OR H04L67/02 OR H04L67/1097 OR H04L67/125 OR H04L9/0861 OR H04L9/3226 OR H04L9/3228 OR H04L9/3239 OR H04L9/3273 OR H04L2463/061 OR H04L2463/102 OR H04L63/0464 OR H04L63/0807 OR H04L63/0861 OR H04L67/10 OR H04L67/18 OR H04L67/22 OR H04L67/303 OR H04L9/0625 OR H04L9/0643 OR H04L9/0662 OR H04L9/0825 OR H04L9/085 OR H04L9/3213 OR H04L9/3263 OR H04L9/34 OR H04L12/28 OR H04L2012/2841 OR H04L2209/38 OR H04L2209/64 OR H04L2209/84 OR H04L2463/062 OR H04L2463/082 OR H04L29/06 OR H04L51/10 OR H04L51/14 OR H04L51/28 OR H04L51/32 OR H04L61/20 OR H04L61/2539 OR H04L61/2596 OR H04L63/0281 OR H04L63/061 OR H04L63/105 OR H04L63/12 OR H04L63/1466 OR H04L63/164 OR H04L63/168 OR H04L63/30 OR H04L65/102 OR H04L65/1069 OR H04L67/14 OR H04L69/12 OR H04L69/14 OR H04L9/006 OR H04L9/0637 OR H04L9/08 OR H04L9/0822 OR H04L9/0827 OR H04L9/083 OR H04L9/0838 OR H04L9/0841 OR H04L9/0847 OR H04L9/0863 OR H04L9/0877 OR H04L9/0897 OR H04L9/32 OR H04L9/3215 OR H04L9/3242 OR H04L9/3268 OR G06Q20/40 OR G06Q20/12 OR G06Q20/385 OR G06Q20/42 OR G06Q20/382 OR G06Q20/3821 OR G06Q20/4014 OR G06Q2220/00 OR G06Q20/32 OR G06Q20/3226 OR G06Q20/3674 OR G06Q20/38215 OR G06Q30/06 OR G06Q20/3829 OR G06Q20/425 OR G06Q20/10 OR G06Q20/322 OR G06Q20/401 OR G06Q20/4018 OR G06Q20/02 OR G06Q20/3227 OR G06Q20/4016 OR G06Q20/045 OR G06Q20/047 OR				

		G06Q20/145 OR G06Q20/3223 OR G06Q20/325 OR G06Q20/327 OR G06Q20/352 OR G06Q20/367 OR G06Q20/409 OR G06Q20/341 OR G06Q50/24 OR G06Q20/105 OR G06Q20/20 OR G06Q20/3255 OR G06Q10/063 OR G06Q20/3278 OR G06Q20/354 OR G06Q20/36 OR G06Q20/3823 OR G06Q20/386 OR G06Q30/0201 OR G06Q30/0284 OR G06Q40/08 OR G06Q10/0635 OR G06Q10/107 OR G06Q20/085 OR G06Q20/18 OR G06Q20/202 OR G06Q20/206 OR G06Q20/342 OR G06Q20/4012 OR G06Q20/405 OR G06Q30/0215 OR G06Q30/0601 OR G06Q40/00 OR G06Q40/02 OR H04W12/06 OR H04W12/001 OR H04W12/0023 OR H04W12/004 OR H04W4/70 OR H04W8/18 OR H04W12/02 OR H04W12/04 OR H04W12/0609 OR H04W12/08 OR H04W12/12 OR H04W88/02 OR H04W12/0027 OR H04W12/0608 OR H04W12/10 OR H04W12/1206 OR H04W12/1208 OR H04W12/0013 OR H04W12/00503 OR H04W12/00504 OR H04W12/00508 OR H04W12/0401 OR H04W12/0802).CPC.				
S142	110	S140 same number	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/30 15:56
S143	73	S142 and (H04M3/42042 or H04M3/382 or H04W4/14 OR H04M2201/40 OR H04M1/72541 OR H04M2203/253 OR H04M3/53333 OR H04M3/537 OR H04M7/12 OR H04M15/47 OR H04M1/663 OR H04M1/72538 OR H04M1/72544 OR H04M2203/6027 OR H04M2242/10 OR H04M3/2281 OR H04M3/42042 OR H04M3/42391 OR H04M3/436 OR H04M3/5183 OR H04M3/53366 OR H04M3/543 or H04M3/42042 or H04M3/382 or H04W4/14 or H04L63/0428 OR H04L63/08 OR H04L63/06 OR H04L63/0853 OR H04L9/3247 OR H04L2209/80 OR	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/30 15:56

		H04L63/0838 OR H04L9/3234 OR H04L63/0435 OR H04L63/062 OR H04L63/126 OR H04L63/101 OR H04L63/083 OR H04L67/12 OR H04L9/0819 OR H04L9/0869 OR H04L9/3271 OR H04L63/0442 OR H04L63/10 OR H04L63/123 OR H04L63/18 OR H04L9/14 OR H04L63/0823 OR H04L9/0894 OR H04L2209/24 OR H04L2209/56 OR H04L2209/805 OR H04L63/102 OR H04L67/06 OR H04L9/0866 OR H04L9/088 OR H04L9/0891 OR H04L9/3231 OR H04L2209/12 OR H04L63/0815 OR H04L63/0884 OR H04L63/20 OR H04L67/04 OR H04L9/10 OR H04L9/321 OR H04L63/0272 OR H04L63/0421 OR H04L63/0846 OR H04L63/0876 OR H04L63/145 OR H04L67/02 OR H04L67/1097 OR H04L67/125 OR H04L9/0861 OR H04L9/3226 OR H04L9/3228 OR H04L9/3239 OR H04L9/3273 OR H04L2463/061 OR H04L2463/102 OR H04L63/0464 OR H04L63/0807 OR H04L63/0861 OR H04L67/10 OR H04L67/18 OR H04L67/22 OR H04L67/303 OR H04L9/0625 OR H04L9/0643 OR H04L9/0662 OR H04L9/0825 OR H04L9/085 OR H04L9/3213 OR H04L9/3263 OR H04L9/34 OR H04L12/28 OR H04L2012/2841 OR H04L2209/38 OR H04L2209/64 OR H04L2209/84 OR H04L2463/062 OR H04L2463/082 OR H04L29/06 OR H04L51/10 OR H04L51/14 OR H04L51/28 OR H04L51/32 OR H04L61/20 OR H04L61/2539 OR H04L61/2596 OR H04L63/0281 OR H04L63/061 OR H04L63/105 OR H04L63/12 OR H04L63/1466 OR H04L63/164 OR H04L63/168 OR H04L63/30 OR H04L65/102 OR H04L65/1069 OR H04L67/14 OR H04L69/12 OR H04L69/14 OR H04L9/006 OR H04L9/0637 OR H04L9/08 OR H04L9/0822 OR H04L9/0827 OR H04L9/083 OR H04L9/0838 OR H04L9/0841 OR H04L9/0847 OR H04L9/0863 OR H04L9/0877 OR H04L9/0897 OR H04L9/32 OR H04L9/3215 OR				

		H04L9/3242 OR H04L9/3268 OR G06Q20/40 OR G06Q20/12 OR G06Q20/385 OR G06Q20/42 OR G06Q20/382 OR G06Q20/3821 OR G06Q20/4014 OR G06Q2220/00 OR G06Q20/32 OR G06Q20/3226 OR G06Q20/3674 OR G06Q20/38215 OR G06Q30/06 OR G06Q20/3829 OR G06Q20/425 OR G06Q20/10 OR G06Q20/322 OR G06Q20/401 OR G06Q20/4018 OR G06Q20/02 OR G06Q20/3227 OR G06Q20/4016 OR G06Q20/045 OR G06Q20/047 OR G06Q20/145 OR G06Q20/3223 OR G06Q20/325 OR G06Q20/327 OR G06Q20/352 OR G06Q20/367 OR G06Q20/409 OR G06Q20/341 OR G06Q50/24 OR G06Q20/105 OR G06Q20/20 OR G06Q20/3255 OR G06Q10/063 OR G06Q20/3278 OR G06Q20/354 OR G06Q20/36 OR G06Q20/3823 OR G06Q20/386 OR G06Q30/0201 OR G06Q30/0284 OR G06Q40/08 OR G06Q10/0635 OR G06Q10/107 OR G06Q20/085 OR G06Q20/18 OR G06Q20/202 OR G06Q20/206 OR G06Q20/342 OR G06Q20/4012 OR G06Q20/405 OR G06Q30/0215 OR G06Q30/0601 OR G06Q40/00 OR G06Q40/02 OR H04W12/06 OR H04W12/001 OR H04W12/0023 OR H04W12/004 OR H04W4/70 OR H04W8/18 OR H04W12/02 OR H04W12/04 OR H04W12/0609 OR H04W12/08 OR H04W12/12 OR H04W88/02 OR H04W12/0027 OR H04W12/0608 OR H04W12/10 OR H04W12/1206 OR H04W12/1208 OR H04W12/0013 OR H04W12/00503 OR H04W12/00504 OR H04W12/00508 OR H04W12/0401 OR H04W12/0802).CPC.				
S144	7,089	((generat$4 or creat$4 or produc$4) near5 (decoder or cryptovariable or cryptovariables or variable or passcode or Password or key or passkey or value) near5 (equipment or device or terminal or endpoint or apparatus or unit or system or unit or station)) with call$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/30 17:13
S145	826	S144 same ((feedback or assuranc$4 or valid$5 or fail$4 or match$4 or	US-PGPUB; USPAT;	OR	ON	2020/12/30 17:13

		author$7 or warrant$5 or guarant$5 or alert$4 or notif$5 or inform$5 or report$4) near5 (callee or called or recipient or receiv$5 or user or party))	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S146	345	S145 same (privacy or security or valid$4 or identif$5 or access or threat$5 or risk$3 or invad$3 or invasion or danger or hack$3 or intrud$3 or intrusion or verif$5)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/30 17:13
S147	110	S146 same number	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/30 17:13
S148	44	S146 same ((phone or telephon$4) near2 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/30 17:35
S149	825	((generat$4 or creat$4 or produc$4) near5 (decoder or cryptovariable or cryptovariables or variable or passcode or Password or key or passkey or value) near5 (equipment or device or terminal or endpoint or apparatus or unit or system or unit or station)) with ((phone or teleph$5) adj number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/31 10:04
S150	407	S149 same (privacy or security or valid$4 or identif$5 or access or threat$5 or risk$3 or invad$3 or invasion or danger or hack$3 or intrud$3 or intrusion or verif$5 or certification or certify$5)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/31 10:11
S151	153	S150 same ((feedback or assuranc$4 or assur$5 or secur$4 or ensur$5 or valid$5 or fail$4 or fault$4 or error$4 or problem or match$4 or author$7 or warrant$5 or guarant$5 or alert$4 or notif$5 or inform$5 or report$4) near5 (callee or called or recipient or receiv$5 or user or party))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/31 10:15

S152	153	S150 same ((feedback or assuranc$4 or assur$5 or secur$4 or ensur$5 or valid$5 or fail$4 or fault$4 or error$4 or problem or match$4 or author$7 or warrant$5 or guarant$5 or alert$4 or notif$5 or inform$5 or report$4 or valid$5) near5 (callee or called or recipient or receiv$5 or user or party))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/31 12:12
S153	624	((generat$4 or creat$4 or produc$4) near5 (passcode or key or passkey or value) near5 (equipment or device or terminal or endpoint or apparatus or unit or system or unit or station)) with ((phone or teleph$5) adj number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/31 12:41
S154	315	S153 same (privacy or security or valid$4 or identif$5 or access or threat$5 or risk$3 or invad$3 or invasion or danger or hack$3 or intrud$3 or intrusion or verif$5 or certification or certify$5)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/31 13:25
S155	113	S154 same ((feedback or assuranc$4 or assur$5 or secur$4 or ensur$5 or valid$5 or fail$4 or fault$4 or error$4 or problem or match$4 or author$7 or warrant$5 or guarant$5 or alert$4 or notif$5 or inform$5 or report$4 or valid$5) near5 (callee or called or recipient or receiv$5 or user or party))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/31 13:25
S156	36	S155 same call$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/12/31 13:47
S157	1,818	((generat$4 or creat$4 or produc$4) near5 (passcode or key or passkey or value) near5 (equipment or device or terminal or endpoint or apparatus or unit or system or unit or station)) same ((phone or teleph$5) adj number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2021/01/01 22:40
S158	29	(US-20150030156-$ or US-20060004772-$ or US-20100293382-$ or US-20110296440-$ or US-20120204032-$ or US-20120191615-$ or US-20110270748-$ or US-20100293381-$ or US-20100327054-$	US-PGPUB; USPAT	OR	OFF	2021/01/01 22:48

		or US-20120018506-$ or US-20050216421-$ or US-20030105725-$ or US-20120253810-$ or US-20110294478-$ or US-20110145152-$ or US-20200153960-$ or US-20070035390-$ or US-20070162742-$).did. or (US-7194618-$ or US-8094788-$ or US-7631193-$ or US-5613012-$ or US-5805719-$ or US-7216109-$ or US-9338287-$ or US-9277049-$ or US-10778842-$ or US-6731731-$ or US-8559606-$).did.				
S159	6	S157 and S158	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2021/01/01 22:48
S160	29	(US-20150030156-$ or US-20060004772-$ or US-20100293382-$ or US-20110296440-$ or US-20120204032-$ or US-20120191615-$ or US-20110270748-$ or US-20100293381-$ or US-20100327054-$ or US-20120018506-$ or US-20050216421-$ or US-20030105725-$ or US-20120253810-$ or US-20110294478-$ or US-20110145152-$ or US-20200153960-$ or US-20070035390-$ or US-20070162742-$).did. or (US-7194618-$ or US-8094788-$ or US-7631193-$ or US-5613012-$ or US-5805719-$ or US-7216109-$ or US-9338287-$ or US-9277049-$ or US-10778842-$ or US-6731731-$ or US-8559606-$).did.	US-PGPUB; USPAT	OR	OFF	2021/01/02 16:52
S161	29	(US-20150030156-$ or US-20060004772-$ or US-20100293382-$ or US-20110296440-$ or US-20120204032-$ or US-20120191615-$ or US-20110270748-$ or US-20100293381-$ or US-20100327054-$ or US-20120018506-$ or US-20050216421-$ or US-20030105725-$ or US-20120253810-$ or US-20110294478-$ or US-20110145152-$ or US-20200153960-$ or US-20070035390-$ or US-20070162742-$).did. or (US-7194618-$ or US-8094788-$ or US-7631193-$ or US-	US-PGPUB; USPAT	OR	OFF	2021/01/24 10:16

		5613012-$ or US-5805719-$ or US-7216109-$ or US-9338287-$ or US-9277049-$ or US-10778842-$ or US-6731731-$ or US-8559606-$).did.				
S162	1,823	((generat$4 or creat$4 or produc$4) near5 (passcode or key or passkey or value) near5 (equipment or device or terminal or endpoint or apparatus or unit or system or unit or station)) same ((phone or teleph$5) adj number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2021/01/24 10:17
S163	6	S161 and S162	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2021/01/24 10:18
S164	5,356	((generat$4 or creat$4 or produc$4 or mak$4 or provid$4 or output$4 or acquir$4 or convert$5 or assgn$4 or $5construct$4 or establish$4) near5 (passcode or key or passkey or value) near5 (equipment or device or terminal or endpoint or apparatus or unit or system or unit or station or phone or telephone or (end adj point))) same ((phone or teleph$5) adj number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2021/01/24 16:14
S165	22,211	((generat$4 or creat$4 or produc$4 or mak$4 or provid$4 or output$4 or acquir$4 or convert$5 or assgn$4 or $5construct$4 or establish$4) near5 (passcode or key or passkey or value or password or passphrase or PIN or identification OR id or code or security or secret) near5 (equipment or device or terminal or endpoint or apparatus or unit or system or unit or station or phone or telephone or (end adj point))) same ((phone or teleph$5) adj number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2021/01/24 16:21
S166	5,333	S165 same (privacy or security or author$7 or fraud$4 or saf$4 or privacy or secu$5)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2021/01/24 16:25

S167	1,724	S166 same ((confirm$4 or verif$4 or ascert$5 or valid$5 or inform$4 or identif$7 or alert$4 or notif$5) near10 (called or callee or recipient or destination or receiv$5 or answer$4) near "10" call$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2021/01/24 16:46
S168	1,003	S167 and (H04M3/42042 or H04M3/382 or H04W4/14 OR H04M2201/40 OR H04M1/72541 OR H04M2203/253 OR H04M3/53333 OR H04M3/537 OR H04M7/12 OR H04M15/47 OR H04M1/663 OR H04M1/72538 OR H04M1/72544 OR H04M2203/6027 OR H04M2242/10 OR H04M3/2281 OR H04M3/42042 OR H04M3/42391 OR H04M3/436 OR H04M3/5183 OR H04M3/53366 OR H04M3/543 or H04M3/42042 or H04M3/382 or H04W4/14 or H04L63/0428 OR H04L63/08 OR H04L63/06 OR H04L63/0853 OR H04L9/3247 OR H04L2209/80 OR H04L63/0838 OR H04L9/3234 OR H04L63/0435 OR H04L63/062 OR H04L63/126 OR H04L63/101 OR H04L63/083 OR H04L67/12 OR H04L9/0819 OR H04L9/0869 OR H04L9/3271 OR H04L63/0442 OR H04L63/10 OR H04L63/123 OR H04L63/18 OR H04L9/14 OR H04L63/0823 OR H04L9/0894 OR H04L2209/24 OR H04L2209/56 OR H04L2209/805 OR H04L63/102 OR H04L67/06 OR H04L9/0866 OR H04L9/088 OR H04L9/0891 OR H04L9/3231 OR H04L2209/12 OR H04L63/0815 OR H04L63/0884 OR H04L63/20 OR H04L67/04 OR H04L9/10 OR H04L9/321 OR H04L63/0272 OR H04L63/0421 OR H04L63/0846 OR H04L63/0876 OR H04L63/145 OR H04L67/02 OR H04L67/1097 OR H04L67/125 OR H04L9/0861 OR H04L9/3226 OR H04L9/3228 OR H04L9/3239 OR H04L9/3273 OR H04L2463/061 OR H04L2463/102 OR H04L63/0464 OR H04L63/0807 OR H04L63/0861 OR H04L67/10 OR H04L67/18 OR H04L67/22 OR H04L67/303 OR H04L9/0625 OR H04L9/0643 OR	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2021/01/24 16:49

		H04L9/0662 OR H04L9/0825 OR H04L9/085 OR H04L9/3213 OR H04L9/3263 OR H04L9/34 OR H04L12/28 OR H04L2012/2841 OR H04L2209/38 OR H04L2209/64 OR H04L2209/84 OR H04L2463/062 OR H04L2463/082 OR H04L29/06 OR H04L51/10 OR H04L51/14 OR H04L51/28 OR H04L51/32 OR H04L61/20 OR H04L61/2539 OR H04L61/2596 OR H04L63/0281 OR H04L63/061 OR H04L63/105 OR H04L63/12 OR H04L63/1466 OR H04L63/164 OR H04L63/168 OR H04L63/30 OR H04L65/102 OR H04L65/1069 OR H04L67/14 OR H04L69/12 OR H04L69/14 OR H04L9/006 OR H04L9/0637 OR H04L9/08 OR H04L9/0822 OR H04L9/0827 OR H04L9/083 OR H04L9/0838 OR H04L9/0841 OR H04L9/0847 OR H04L9/0863 OR H04L9/0877 OR H04L9/0897 OR H04L9/32 OR H04L9/3215 OR H04L9/3242 OR H04L9/3268 OR G06Q20/40 OR G06Q20/12 OR G06Q20/385 OR G06Q20/42 OR G06Q20/382 OR G06Q20/3821 OR G06Q20/4014 OR G06Q2220/00 OR G06Q20/32 OR G06Q20/3226 OR G06Q20/3674 OR G06Q20/38215 OR G06Q30/06 OR G06Q20/3829 OR G06Q20/425 OR G06Q20/10 OR G06Q20/322 OR G06Q20/401 OR G06Q20/4018 OR G06Q20/02 OR G06Q20/3227 OR G06Q20/4016 OR G06Q20/045 OR G06Q20/047 OR G06Q20/145 OR G06Q20/3223 OR G06Q20/325 OR G06Q20/327 OR G06Q20/352 OR G06Q20/367 OR G06Q20/409 OR G06Q20/341 OR G06Q50/24 OR G06Q20/105 OR G06Q20/20 OR G06Q20/3255 OR G06Q10/063 OR G06Q20/3278 OR G06Q20/354 OR G06Q20/36 OR G06Q20/3823 OR G06Q20/386 OR G06Q30/0201 OR G06Q30/0284 OR G06Q40/08 OR G06Q10/0635 OR G06Q10/107 OR G06Q20/085 OR G06Q20/18 OR G06Q20/202 OR G06Q20/206 OR G06Q20/342 OR G06Q20/4012 OR G06Q20/405 OR G06Q30/0215 OR G06Q30/0601 OR				

		G06Q40/00 OR G06Q40/02 OR H04W12/06 OR H04W12/001 OR H04W12/0023 OR H04W12/004 OR H04W4/70 OR H04W8/18 OR H04W12/02 OR H04W12/04 OR H04W12/0609 OR H04W12/08 OR H04W12/12 OR H04W88/02 OR H04W12/0027 OR H04W12/0608 OR H04W12/10 OR H04W12/1206 OR H04W12/1208 OR H04W12/0013 OR H04W12/00503 OR H04W12/00504 OR H04W12/00508 OR H04W12/0401 OR H04W12/0802).CPC.				
S169	5,356	((generat$4 or creat$4 or produc$4 or mak$4 or provid$4 or output$4 or acquir$4 or convert$5 or assgn$4 or $5construct$4 or establish$4) near5 (passcode or key or passkey or value) near5 (equipment or device or terminal or endpoint or apparatus or unit or system or unit or station or phone or telephone or (end adj point))) same ((phone or teleph$5) adj number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2021/01/24 22:20
S170	2,298	S169 same ((confirm$4 or verif$4 or ascert$5 or valid$5 or inform$4 or identif$7 or alert$4 or notif$5) near10 (called or callee or recipient or destination or receiv$5 or answer$4) near "10" call$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2021/01/24 22:20
S171	22,211	((generat$4 or creat$4 or produc$4 or mak$4 or provid$4 or output$4 or acquir$4 or convert$5 or assgn$4 or $5construct$4 or establish$4) near5 (passcode or key or passkey or value or password or passphrase or PIN or identification OR id or code or security or secret) near5 (equipment or device or terminal or endpoint or apparatus or unit or system or unit or station or phone or telephone or (end adj point))) same ((phone or teleph$5) adj number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2021/01/24 22:22
S172	5,333	S171 same (privacy or security or author$7 or fraud$4 or saf$4 or privacy or secu$5)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2021/01/24 22:22

S173	193	S172 same ((confirm$4 or verif$4 or ascert$5 or valid$5 or inform$4 or identif$7 or alert$4 or notif$5) near10 (called or callee or recipient or destination or receiv$5 or answer$4) near10 call$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2021/01/24 22:22
S174	118	S173 and (H04M3/42042 or H04M3/382 or H04W4/14 OR H04M2201/40 OR H04M1/72541 OR H04M2203/253 OR H04M3/53333 OR H04M3/537 OR H04M7/12 OR H04M15/47 OR H04M1/663 OR H04M1/72538 OR H04M1/72544 OR H04M2203/6027 OR H04M2242/10 OR H04M3/2281 OR H04M3/42042 OR H04M3/42391 OR H04M3/436 OR H04M3/5183 OR H04M3/53366 OR H04M3/543 or H04M3/42042 or H04M3/382 or H04W4/14 or H04L63/0428 OR H04L63/08 OR H04L63/06 OR H04L63/0853 OR H04L9/3247 OR H04L2209/80 OR H04L63/0838 OR H04L9/3234 OR H04L63/0435 OR H04L63/062 OR H04L63/126 OR H04L63/101 OR H04L63/083 OR H04L67/12 OR H04L9/0819 OR H04L9/0869 OR H04L9/3271 OR H04L63/0442 OR H04L63/10 OR H04L63/123 OR H04L63/18 OR H04L9/14 OR H04L63/0823 OR H04L9/0894 OR H04L2209/24 OR H04L2209/56 OR H04L2209/805 OR H04L63/102 OR H04L67/06 OR H04L9/0866 OR H04L9/088 OR H04L9/0891 OR H04L9/3231 OR H04L2209/12 OR H04L63/0815 OR H04L63/0884 OR H04L63/20 OR H04L67/04 OR H04L9/10 OR H04L9/321 OR H04L63/0272 OR H04L63/0421 OR H04L63/0846 OR H04L63/0876 OR H04L63/145 OR H04L67/02 OR H04L67/1097 OR H04L67/125 OR H04L9/0861 OR H04L9/3226 OR H04L9/3228 OR H04L9/3239 OR H04L9/3273 OR H04L2463/061 OR H04L2463/102 OR H04L63/0464 OR H04L63/0807 OR H04L63/0861 OR H04L67/10 OR H04L67/18 OR H04L67/22 OR H04L67/303 OR H04L9/0625 OR H04L9/0643 OR	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2021/01/24 22:29

		H04L9/0662 OR H04L9/0825 OR H04L9/085 OR H04L9/3213 OR H04L9/3263 OR H04L9/34 OR H04L12/28 OR H04L2012/2841 OR H04L2209/38 OR H04L2209/64 OR H04L2209/84 OR H04L2463/062 OR H04L2463/082 OR H04L29/06 OR H04L51/10 OR H04L51/14 OR H04L51/28 OR H04L51/32 OR H04L61/20 OR H04L61/2539 OR H04L61/2596 OR H04L63/0281 OR H04L63/061 OR H04L63/105 OR H04L63/12 OR H04L63/1466 OR H04L63/164 OR H04L63/168 OR H04L63/30 OR H04L65/102 OR H04L65/1069 OR H04L67/14 OR H04L69/12 OR H04L69/14 OR H04L9/006 OR H04L9/0637 OR H04L9/08 OR H04L9/0822 OR H04L9/0827 OR H04L9/083 OR H04L9/0838 OR H04L9/0841 OR H04L9/0847 OR H04L9/0863 OR H04L9/0877 OR H04L9/0897 OR H04L9/32 OR H04L9/3215 OR H04L9/3242 OR H04L9/3268 OR G06Q20/40 OR G06Q20/12 OR G06Q20/385 OR G06Q20/42 OR G06Q20/382 OR G06Q20/3821 OR G06Q20/4014 OR G06Q2220/00 OR G06Q20/32 OR G06Q20/3226 OR G06Q20/3674 OR G06Q20/38215 OR G06Q30/06 OR G06Q20/3829 OR G06Q20/425 OR G06Q20/10 OR G06Q20/322 OR G06Q20/401 OR G06Q20/4018 OR G06Q20/02 OR G06Q20/3227 OR G06Q20/4016 OR G06Q20/045 OR G06Q20/047 OR G06Q20/145 OR G06Q20/3223 OR G06Q20/325 OR G06Q20/327 OR G06Q20/352 OR G06Q20/367 OR G06Q20/409 OR G06Q20/341 OR G06Q50/24 OR G06Q20/105 OR G06Q20/20 OR G06Q20/3255 OR G06Q10/063 OR G06Q20/3278 OR G06Q20/354 OR G06Q20/36 OR G06Q20/3823 OR G06Q20/386 OR G06Q30/0201 OR G06Q30/0284 OR G06Q40/08 OR G06Q10/0635 OR G06Q10/107 OR G06Q20/085 OR G06Q20/18 OR G06Q20/202 OR G06Q20/206 OR G06Q20/342 OR G06Q20/4012 OR G06Q20/405 OR G06Q30/0215 OR G06Q30/0601 OR				

		G06Q40/00 OR G06Q40/02 OR H04W12/06 OR H04W12/001 OR H04W12/0023 OR H04W12/004 OR H04W4/70 OR H04W8/18 OR H04W12/02 OR H04W12/04 OR H04W12/0609 OR H04W12/08 OR H04W12/12 OR H04W88/02 OR H04W12/0027 OR H04W12/0608 OR H04W12/10 OR H04W12/1206 OR H04W12/1208 OR H04W12/0013 OR H04W12/00503 OR H04W12/00504 OR H04W12/00508 OR H04W12/0401 OR H04W12/0802).CPC.				
S175	22,211	((generat$4 or creat$4 or produc$4 or mak$4 or provid$4 or output$4 or acquir$4 or convert$5 or assgn$4 or $5construct$4 or establish$4) near5 (passcode or key or passkey or value or password or passphrase or PIN or identification OR id or code or security or secret) near5 (equipment or device or terminal or endpoint or apparatus or unit or system or unit or station or phone or telephone or (end adj point))) same ((phone or teleph$5) adj number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2021/01/25 14:23
S176	5,333	S175 same (privacy or security or author$7 or fraud$4 or saf$4 or privacy or secu$5)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2021/01/25 14:23
S177	193	S176 same ((confirm$4 or verif$4 or ascert$5 or valid$5 or inform$4 or identif$7 or alert$4 or notif$5) near10 (called or callee or recipient or destination or receiv$5 or answer$4) near10 call$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2021/01/25 14:23
S178	118	S177 and (H04M3/42042 or H04M3/382 or H04W4/14 OR H04M2201/40 OR H04M1/72541 OR H04M2203/253 OR H04M3/53333 OR H04M3/537 OR H04M7/12 OR H04M15/47 OR H04M1/663 OR H04M1/72538 OR H04M1/72544 OR H04M2203/6027 OR H04M2242/10 OR H04M3/2281 OR H04M3/42042 OR H04M3/42391 OR H04M3/436 OR H04M3/5183 OR H04M3/53366 OR	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2021/01/25 14:23

		H04M3/543 or H04M3/42042 or H04M3/382 or H04W4/14 or H04L63/0428 OR H04L63/08 OR H04L63/06 OR H04L63/0853 OR H04L9/3247 OR H04L2209/80 OR H04L63/0838 OR H04L9/3234 OR H04L63/0435 OR H04L63/062 OR H04L63/126 OR H04L63/101 OR H04L63/083 OR H04L67/12 OR H04L9/0819 OR H04L9/0869 OR H04L9/3271 OR H04L63/0442 OR H04L63/10 OR H04L63/123 OR H04L63/18 OR H04L9/14 OR H04L63/0823 OR H04L9/0894 OR H04L2209/24 OR H04L2209/56 OR H04L2209/805 OR H04L63/102 OR H04L67/06 OR H04L9/0866 OR H04L9/088 OR H04L9/0891 OR H04L9/3231 OR H04L2209/12 OR H04L63/0815 OR H04L63/0884 OR H04L63/20 OR H04L67/04 OR H04L9/10 OR H04L9/321 OR H04L63/0272 OR H04L63/0421 OR H04L63/0846 OR H04L63/0876 OR H04L63/145 OR H04L67/02 OR H04L67/1097 OR H04L67/125 OR H04L9/0861 OR H04L9/3226 OR H04L9/3228 OR H04L9/3239 OR H04L9/3273 OR H04L2463/061 OR H04L2463/102 OR H04L63/0464 OR H04L63/0807 OR H04L63/0861 OR H04L67/10 OR H04L67/18 OR H04L67/22 OR H04L67/303 OR H04L9/0625 OR H04L9/0643 OR H04L9/0662 OR H04L9/0825 OR H04L9/085 OR H04L9/3213 OR H04L9/3263 OR H04L9/34 OR H04L12/28 OR H04L2012/2841 OR H04L2209/38 OR H04L2209/64 OR H04L2209/84 OR H04L2463/062 OR H04L2463/082 OR H04L29/06 OR H04L51/10 OR H04L51/14 OR H04L51/28 OR H04L51/32 OR H04L61/20 OR H04L61/2539 OR H04L61/2596 OR H04L63/0281 OR H04L63/061 OR H04L63/105 OR H04L63/12 OR H04L63/1466 OR H04L63/164 OR H04L63/168 OR H04L63/30 OR H04L65/102 OR H04L65/1069 OR H04L67/14 OR H04L69/12 OR H04L69/14 OR H04L9/006 OR H04L9/0637 OR H04L9/08 OR H04L9/0822 OR				

		H04L9/0827 OR H04L9/083 OR H04L9/0838 OR H04L9/0841 OR H04L9/0847 OR H04L9/0863 OR H04L9/0877 OR H04L9/0897 OR H04L9/32 OR H04L9/3215 OR H04L9/3242 OR H04L9/3268 OR G06Q20/40 OR G06Q20/12 OR G06Q20/385 OR G06Q20/42 OR G06Q20/382 OR G06Q20/3821 OR G06Q20/4014 OR G06Q2220/00 OR G06Q20/32 OR G06Q20/3226 OR G06Q20/3674 OR G06Q20/38215 OR G06Q30/06 OR G06Q20/3829 OR G06Q20/425 OR G06Q20/10 OR G06Q20/322 OR G06Q20/401 OR G06Q20/4018 OR G06Q20/02 OR G06Q20/3227 OR G06Q20/4016 OR G06Q20/045 OR G06Q20/047 OR G06Q20/145 OR G06Q20/3223 OR G06Q20/325 OR G06Q20/327 OR G06Q20/352 OR G06Q20/367 OR G06Q20/409 OR G06Q20/341 OR G06Q50/24 OR G06Q20/105 OR G06Q20/20 OR G06Q20/3255 OR G06Q10/063 OR G06Q20/3278 OR G06Q20/354 OR G06Q20/36 OR G06Q20/3823 OR G06Q20/386 OR G06Q30/0201 OR G06Q30/0284 OR G06Q40/08 OR G06Q10/0635 OR G06Q10/107 OR G06Q20/085 OR G06Q20/18 OR G06Q20/202 OR G06Q20/206 OR G06Q20/342 OR G06Q20/4012 OR G06Q20/405 OR G06Q30/0215 OR G06Q30/0601 OR G06Q40/00 OR G06Q40/02 OR H04W12/06 OR H04W12/001 OR H04W12/0023 OR H04W12/004 OR H04W4/70 OR H04W8/18 OR H04W12/02 OR H04W12/04 OR H04W12/0609 OR H04W12/08 OR H04W12/12 OR H04W88/02 OR H04W12/0027 OR H04W12/0608 OR H04W12/10 OR H04W12/1206 OR H04W12/1208 OR H04W12/0013 OR H04W12/00503 OR H04W12/00504 OR H04W12/00508 OR H04W12/0401 OR H04W12/0802).CPC.				

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp

S179	2	(generat$4 and value and score and security and (failure or assurance) and verif$5 and call$4).clm.	US-PGPUB; USPAT	OR	ON	2021/01/25 15:08

1/25/2021 6:28:13 PM
C:\Users\ateshale\Documents\EAST\Workspaces\16785423.wsp

Notice of References Cited	Application/Control No. 16/785,423	Applicant(s)/Patent Under Reexamination Jakobsson, Bjorn Markus	
	Examiner AKELAW A TESHALE	Art Unit 2653	Page 1 of 1

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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-9338287-B1	05-2016	Russo; Richard J.	H04W12/06	1/1
*	B	US-20100054443-A1	03-2010	Bhattiprolu; Sukadev	H04M3/38	379/211.02
*	C	US-7194618-B1	03-2007	Suominen; Edwin A.	H04L63/123	713/155
*	D	US-20100293382-A1	11-2010	Hammad; Ayman	H04L9/3234	713/173
*	E	US-20120204032-A1	08-2012	Wilkins; John	H04L63/0428	713/170
*	F	US-20120191615-A1	07-2012	Schibuk; Norman	H04L9/3239	705/75
*	G	US-7631193-B1	12-2009	Hoffman; Ned	H04L63/0861	713/186
*	H	US-9277049-B1	03-2016	Danis; Serdar Artun	H04M3/54	1/1
*	I	US-20070035390-A1	02-2007	Thomas; Theodosios	H04W8/245	340/539.11
*	J	US-20070162742-A1	07-2007	Song; Chen-Hwa	H04W12/06	713/156
*	K	US-20140187203-A1	07-2014	Bombacino; Vinicio	H04W12/041	455/411
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS,
AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0471

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/785,423	Jakobsson, Bjorn Markus
	Examiner	**Art Unit**
	AKELAW A TESHALE	2653

CPC						
Symbol					**Type**	**Version**
H04M	/	3	/	42042	F	2013-01-01
H04W	/	4	/	14	I	2013-01-01
H04M	/	3	/	382	I	2013-01-01

CPC Combination Sets							
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	28	
/AKELAW TESHALE/ Primary Examiner, Art Unit 2653	26 January 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office — Part of Paper No.: 20210125

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS,
AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0472

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/785,423	Jakobsson, Bjorn Markus
	Examiner	**Art Unit**
	AKELAW A TESHALE	2653

INTERNATIONAL CLASSIFICATION				
CLAIMED				
H04M	/	3	/	42

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					

NONE (Assistant Examiner) (Date)	**Total Claims Allowed:** 28	
/AKELAW TESHALE/ Primary Examiner, Art Unit 2653 (Primary Examiner) 26 January 2021 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS,
AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0473

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/785,423	Jakobsson, Bjorn Markus
	Examiner	**Art Unit**
	AKELAW A TESHALE	2653

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1	7	10	17	19	23	28								
1	2	8	11	18	20	24	29								
2	3	9	12	27	21	25	30								
3	4	10	13	28	22	26	31								
4	5	11	14	19	23										
	6	12	15	20	24										
	7	13	16	21	25										
5	8	14	17	15	26										
6	9	16	18	22	27										

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	28	
/AKELAW TESHALE/ Primary Examiner, Art Unit 2653	26 January 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office

Part of Paper No.: 20210125

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS,
AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0474

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	16785423
Filing Date	2020-02-07
First Named Inventor	Bjorn Markus Jakobsson
Art Unit	2653
Examiner Name	Akelaw Teshale
Attorney Docket Number	MJAKP016C2

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7464408		2008-12-09	SHAH BAKUL	
	2	7748038		2010-06-29	OLIVIER MICHAEL	
	3	7854007		2010-12-14	SPROSTS CRAIG	
	4	7941842		2011-05-10	PRINCE MATTHEW B	
	5	8214490		2012-07-03	VOS JACOB	
	6	8230505		2012-07-24	AHRENS DAVID	
	7	8667581		2014-03-04	STEEVES DAVID J	
	8	8769684		2014-07-01	STOLFO SALVATORE J	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Akelaw Teshale
	Attorney Docket Number	MJAKP016C2

	9	8813228		2014-08-19	MAGEE JOSEPH C	
	10	8880604		2014-11-04	CHEN XIAO YAN	
	11	8904524		2014-12-02	HODGMAN ROY	
	12	9027134		2015-05-05	FOSTER JAMES C	
	13	9338026		2016-05-10	BANDINI JEAN-CHRISTOPHE DENIS	
	14	9491155		2016-11-08	JOHANSSON JESPER MIKAEL	
	15	9501639		2016-11-22	STOLFO SALVATORE J	
	16	9654492		2017-05-16	MAYLOR JACKIE	
	17	9781149		2017-10-03	HIMLER ALAN	
	18	9910984		2018-03-06	VALENCIA ANDRES	

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Examiner Name	Akelaw Teshale
Attorney Docket Number	MJAKP016C2

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20030009694		2003-01-09	WENOCUR MICHAEL L	
	2	20030200108		2003-10-23	MALNOE MICHEL	
	3	20040073617		2004-04-15	MILLIKEN WALTER CLARK	
	4	20040148358		2004-07-29	SINGH TARVINDER P	
	5	20040215977		2004-10-28	GOODMAN JOSHUA T	
	6	20050021649		2005-01-27	GOODMAN JOSHUA	
	7	20050091320		2005-04-28	KIRSCH STEVEN	
	8	20050283837		2005-12-22	OLIVIER MICHAEL	
	9	20060037075		2006-02-16	FRATTURA DAVID E	
	10	20060161989		2006-07-20	RESHEF ERAN	

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	Art Unit	2653
	Examiner Name	Akelaw Teshale
	Attorney Docket Number	MJAKP016C2

	11	20060277259		2006-12-07	MURPHY ELISSA	
	12	20060282660		2006-12-14	VARGHESE THOMAS	
	13	20070078936		2007-04-05	QUINLAN DANIEL	
	14	20070079379		2007-04-05	SPROSTS CRAIG	
	15	20070208850		2007-09-06	LIN KUNHUA	
	16	20070289018		2007-12-13	STEEVES DAVID J	
	17	20090157708		2009-06-18	BANDINI JEAN-CHRISTOPHE DENIS	
	18	20100077483		2010-03-25	STOLFO SALVATORE J	
	19	20100095374		2010-04-15	GILLUM ELIOT C	
	20	20110214187		2011-09-01	WITTENSTEIN ANDREAS	
	21	20120084866		2012-04-05	STOLFO SALVATORE J	

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	Examiner Name	Akelaw Teshale
	Attorney Docket Number	MJAKP016C2

	22	20130263226		2013-10-03	SUDIA FRANK W	
	23	20140007238		2014-01-02	MAGEE JOSEPH C	
	24	20160012222		2016-01-14	STOLFO SALVATORE J	
	25	20170126661		2017-05-04	BRANNON JONATHAN BLAKE	
	26	20180091453		2018-03-29	JAKOBSSON BJORN MARKUS	
	27	20180131686		2018-05-10	BRANNON JONATHAN BLAKE	
	28	20180343246		2018-11-29	BENAYED MOHAMED KARIM	
	29	20190012478		2019-01-10	NARAYANASWAMY KRISHNA	
	30	20200067861		2020-02-27	LEDDY WILLIAM J	

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]¡	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]

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Attorney Docket Number	MJAKP016C2

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	ADRIAN E. McELLIGOTT, "A Security pass for messages: message keys", CEAS '11: Proceedings of the 8th Annual Collaboration, Electronic messaging, Anti-abuse and Spam Conference. pp 184-192 (Year: 2011)	
	2	AKIN et al., "Efficient hardware implementations of high throughput SHA-3 candidates keccak, luffa and blue midnight wish for single- and multi-message hashing", SIN '10: Proceedings of the 3rd international conference on security of information and network. pp 168-177 (Year: 2010)	
	3	BINKLEY et al., "Improving identifier informativeness using part of speech information", MSR '11: Proceedings of the 8th Working Conference on Mining Software Repositories. May 2011, pp 203-206. (Year: 2011)	
	4	HEINERMANN et al., "Recommending API methods based on identifier contexts", SUITE '11: Proceedings of the 3rd International Workshop on Search-Driven Development: Users, Infrastructure, Tools, and Evaluation. May 2011, pp 1-4. (Year: 2011)	
	5	LASZKA et al., "Integrity assurance in resource-bounded systems through stochastic message authentication", HotSoS '15: Proceedings of the 2015 Symposium and Bootcamp on the Science of security. April 2015, Article No.: 1, pp 1-12. https://doi.org/ (Year: 2015)	
	6	PETERSON ET AL. "Authenticated Identity Management in the Session Initiation Protocol (SIP)". July 15, 2013. https://www.ietf.org/archive/id/draft-jennings-dispatch-rfc4474bis-01.txt	
	7	PETERSON ET AL. "Authenticated Identity Management in the Session Initiation Protocol (SIP)". May 29, 2013. https://datatracker.ietf.org/doc/draft-jennings-dispatch-rfc4474bis/00/	
	8	Search Query Report from IP.com (performed 7/31/2020) (Year: 2020)	

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	Examiner Name	Akelaw Teshale
	Attorney Docket Number	MJAKP016C2

	9	TYAGI et al., "Traceback for End-to-End Encrypted Messaging" CCS '19: Proceeding of 2019 ACM SIGSAC Conference on Computer and Communications Security. pp 4134-430 (Year: 2019)	

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature	/AKELAW TESHALE/	Date Considered	01/26/2021

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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Filing Date	2020-02-07
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Art Unit	2653
Examiner Name	Akelaw Teshale
Attorney Docket Number	MJAKP016C2

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☒ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Yeu-Ting George Cheng/	Date (YYYY-MM-DD)	2020-08-12
Name/Print	Yeu-Ting George Cheng	Registration Number	69408

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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NOTICE OF ALLOWANCE AND FEE(S) DUE

21912 7590 02/03/2021
VAN PELT, YI & JAMES LLP
10050 N. FOOTHILL BLVD #200
CUPERTINO, CA 95014

EXAMINER
TESHALE, AKELAW

ART UNIT	PAPER NUMBER
2653	

DATE MAILED: 02/03/2021

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/785,423	02/07/2020	Bjorn Markus Jakobsson	MJAKP016C2	9490

TITLE OF INVENTION: VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$600	$0.00	$0.00	$600	05/03/2021

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS, AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0484

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
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Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

21912 7590 02/03/2021
VAN PELT, YI & JAMES LLP
10050 N. FOOTHILL BLVD #200
CUPERTINO, CA 95014

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/785,423	02/07/2020	Bjorn Markus Jakobsson	MJAKP016C2	9490

TITLE OF INVENTION: VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$600	$0.00	$0.00	$600	05/03/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
TESHALE, AKELAW	2653	379-088200

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
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1 _____
2 _____
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3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ❑ Issue Fee ❑ Publication Fee (if required) ❑ Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

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❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

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Typed or printed name _____ Registration No. _____

PTOL-85 Part B (08-18) Approved for use through 01/31/2020 OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS, AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0485

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CUPERTINO, CA 95014

EXAMINER	
TESHALE, AKELAW	
ART UNIT	PAPER NUMBER
2653	

DATE MAILED: 02/03/2021

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

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OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 16/785,423	Applicant(s) Jakobsson, Bjorn Markus	
	Examiner AKELAW A TESHALE	Art Unit 2653	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to 11/09/2020.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 2-5 and 8-31 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information , please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☑ Notice of References Cited (PTO-892)
2. ☑ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/AKELAW TESHALE/
Primary Examiner, Art Unit 2653

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DETAILED ACTION

Reasons for Allowance

1. **Claims 2-5 and 8-31 are** allowed.

2. The following is an examiner's statement of reasons for allowance: Applicant arguments/ Remarks filed on 11/09/2020 in conjunction with the remarks page 7 has been reviewed by the examiner in view of the prior art of record and it is agreed that the prior art of record does not teach the independent claims 2,21 and 22.

Claims 3-5, 8-31allowed as depending from claim 2.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AKELAW A TESHALE whose telephone number is (571)270-5302. The examiner can normally be reached on 9 am -6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on (571)272-7547. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AKELAW TESHALE
Primary Examiner
Art Unit 2653

/AKELAW TESHALE/
Primary Examiner, Art Unit 2653

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/785,423	Jakobsson, Bjorn Markus
	Examiner	Art Unit
	AKELAW A TESHALE	2653

CPC - Searched*		
Symbol	**Date**	**Examiner**
H04M3/42042, H04M3/382, H04W4/14, H04M2201/40,H04M1/72541, H04M2203/253, H04M3/53333, H04M3/537 , H04M7/12 OR H04M15/47 OR H04M1/663 OR H04M1/72538 OR H04M1/72544 , H04M2203/6027, H04M2242/10, H04M3/2281, H04M3/42042, H04M3/4239,H04M3/436, H04M3/5183, H04M3/53366,H04M3/543, H04M3/42042, H04M3/382, H04W4/14, H04L63/0428, H04L63/08, H04L63/06, H04L63/0853, H04L9/3247,H04L2209/80, H04L63/0838, H04L9/3234, H04L63/0435, H04L63/062, H04L63/126, H04L63/101, H04L63/083, H04L67/12,H04L9/0819, H04L9/0869, H04L9/3271, H04L63/0442,H04L63/10, H04L63/123	01/25/2021	AT

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	**Date**	**Examiner**
Inventor name search (east)	12/30/2020	AT
east search (US-PGPUB;USPAT;USOCR;FPRS;EPO;JPO; DERWENT;IBM_TDB)	01/25/2021	AT
Please see east search attachment	01/26/2021	AT

/AKELAW TESHALE/ Primary Examiner, Art Unit 2653	

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS, AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0491

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/785,423	Jakobsson, Bjorn Markus
	Examiner	Art Unit
	AKELAW A TESHALE	2653

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
east interference search		01/25/2021	AT

/AKELAW TESHALE/ Primary Examiner, Art Unit 2653	

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS,
AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0492

Electronic Acknowledgement Receipt

EFS ID:	42100079
Application Number:	16785423
International Application Number:	
Confirmation Number:	9490
Title of Invention:	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA
First Named Inventor/Applicant Name:	Bjorn Markus Jakobsson
Customer Number:	21912
Filer:	Yeu-Ting George Cheng/Elaine Nguyen
Filer Authorized By:	Yeu-Ting George Cheng
Attorney Docket Number:	MJAKP016C2
Receipt Date:	05-MAR-2021
Filing Date:	07-FEB-2020
Time Stamp:	12:40:01
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$130
RAM confirmation Number	E202135C49330594
Deposit Account	500685
Authorized User	Elaine Nguyen
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.16 (National application filing, search, and examination fees) 37 CFR 1.17 (Patent application and reexamination processing fees)	

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	MJAKP016C2_IDS_09_SB08.pdf	1054111 e120d6858b7640cd3f1b124ee7b163f483c2fddd	no	6
Warnings:					
Information:					
2	Non Patent Literature	Search_Query_Report_1-6-2020.pdf	675523 60710b110e4682e00102ca3b5ed549f756c82a82	no	4
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30528 bbe908830d5e860d6c55d071cc36aa15cf8c5e33	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1760162		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Akelaw Teshale
	Attorney Docket Number	MJAKP016C2

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7668951		2010-02-23	LUND PETER K	
	2	7890358		2011-02-15	DUTTA RABINDRANATH	
	3	8931041		2015-01-06	BANERJEE DEB	
	4	9118653		2015-08-25	NIMASHAKAVI KIRANKUMAR	
	5	9602508		2017-03-21	MAHAFFEY KEVIN PATRICK	
	6	10277628		2019-04-30	JAKOBSSON BJORN MARKUS	

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear

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AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0495

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Akelaw Teshale
	Attorney Docket Number	MJAKP016C2

	1	20080022013		2008-01-24	ADELMAN WARREN	
	2	20080104180		2008-05-01	GABE CHRISTOPHER JOHN	
	3	20100005191		2010-01-07	DRAKO DEAN	
	4	20120102566		2012-04-26	VRANCKEN BART	
	5	20120204221		2012-08-09	MONJAS LLORENTE MIGUEL ANGEL	
	6	20130036455		2013-02-07	BODI MIKLOS TAMAS	
	7	20130086645		2013-04-04	SRINIVASAN VENKATARAMAN UPPILI	
	8	20130173712		2013-07-04	MONJAS LLORENTE MIGUEL ANGEL	
	9	20130340079		2013-12-19	GOTTLIEB YITZCHAK	
	10	20140189808		2014-07-03	MAHAFFEY KEVIN PATRICK	
	11	20140317697		2014-10-23	NIMASHAKAVI KIRANKUMAR	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Akelaw Teshale
	Attorney Docket Number	MJAKP016C2

	12	20170230323		2017-08-10	JAKOBSSON BJORN MARKUS	
	13	20180041491		2018-02-08	GUPTA LOKESH	
	14	20180041515		2018-02-08	GUPTA LOKESH	
	15	20180097841		2018-04-05	STOLARZ DAMIEN PHELAN	
	16	20190095498		2019-03-28	SRINIVASAN SUDHIR KUMAR	
	17	20190095516		2019-03-28	SRINIVASAN SUDHIR KUMAR	
	18	20190306237		2019-10-03	SRINIVASAN SUDHIR KUMAR	
	19	20200076817		2020-03-05	GUPTA LOKESH	
	20	20200244638		2020-07-30	GUPTA LOKESH	
	21	20200264860		2020-08-20	SRINIVASAN SUDHIR KUMAR	
	22	20200265062		2020-08-20	SRINIVASAN SUDHIR KUMAR	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Akelaw Teshale
	Attorney Docket Number	MJAKP016C2

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							

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NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	Search Query Report from IP.com (performed 1/6/2020) (Year: 2020).	

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Akelaw Teshale
	Attorney Docket Number	MJAKP016C2

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☒ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Yeu-Ting George Cheng/	Date (YYYY-MM-DD)	2021-03-05
Name/Print	Yeu-Ting George Cheng	Registration Number	69408

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	16785423
Filing Date:	07-Feb-2020
Title of Invention:	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA
First Named Inventor/Applicant Name:	Bjorn Markus Jakobsson
Filer:	Yeu-Ting George Cheng/Elaine Nguyen
Attorney Docket Number:	MJAKP016C2

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
SUBMISSION- INFORMATION DISCLOSURE STMT	2806	1	130	130
		Total in USD ($)		**130**

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/785,423	02/07/2020	Bjorn Markus Jakobsson	MJAKP016C2	9490

21912 7590 03/19/2021

VAN PELT, YI & JAMES LLP
10050 N. FOOTHILL BLVD #200
CUPERTINO, CA 95014

EXAMINER	
TESHALE, AKELAW	

ART UNIT	PAPER NUMBER
2653	

NOTIFICATION DATE	DELIVERY MODE
03/19/2021	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptocorrespondence@ip-patent.com

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS,
AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0503

UNITED STATES DEPARTMENT OF COMMERCE
U.S. Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450

APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR/ PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
16/785,423	02/07/2020	Jakobsson, Bjorn Markus	MJAKP016C2

		EXAMINER	
VAN PELT, YI & JAMES LLP 10050 N. FOOTHILL BLVD #200 CUPERTINO, CA 95014		AKELAW A TESHALE	
		ART UNIT	PAPER
		2653	20210315

DATE MAILED: _____

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner for Patents

IDS filed 03/05/2021 has been considered and reviewed.

/AKELAW TESHALE/
Primary Examiner, Art Unit 2653

PTO-90C (Rev.04-03)

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	16785423
Filing Date	2020-02-07
First Named Inventor	Bjorn Markus Jakobsson
Art Unit	2653
Examiner Name	Akelaw Teshale
Attorney Docket Number	MJAKP016C2

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7668951		2010-02-23	LUND PETER K	
	2	7890358		2011-02-15	DUTTA RABINDRANATH	
	3	8931041		2015-01-06	BANERJEE DEB	
	4	9118653		2015-08-25	NIMASHAKAVI KIRANKUMAR	
	5	9602508		2017-03-21	MAHAFFEY KEVIN PATRICK	
	6	10277628		2019-04-30	JAKOBSSON BJORN MARKUS	

If you wish to add additional U.S. Patent citation information please click the Add button. Add

U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.T/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Akelaw Teshale
	Attorney Docket Number	MJAKP016C2

	1	20080022013		2008-01-24	ADELMAN WARREN	
	2	20080104180		2008-05-01	GABE CHRISTOPHER JOHN	
	3	20100005191		2010-01-07	DRAKO DEAN	
	4	20120102566		2012-04-26	VRANCKEN BART	
	5	20120204221		2012-08-09	MONJAS LLORENTE MIGUEL ANGEL	
	6	20130036455		2013-02-07	BODI MIKLOS TAMAS	
	7	20130086645		2013-04-04	SRINIVASAN VENKATARAMAN UPPILI	
	8	20130173712		2013-07-04	MONJAS LLORENTE MIGUEL ANGEL	
	9	20130340079		2013-12-19	GOTTLIEB YITZCHAK	
	10	20140189808		2014-07-03	MAHAFFEY KEVIN PATRICK	
	11	20140317697		2014-10-23	NIMASHAKAVI KIRANKUMAR	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.T/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Akelaw Teshale
	Attorney Docket Number	MJAKP016C2

	12	20170230323		2017-08-10	JAKOBSSON BJORN MARKUS	
	13	20180041491		2018-02-08	GUPTA LOKESH	
	14	20180041515		2018-02-08	GUPTA LOKESH	
	15	20180097841		2018-04-05	STOLARZ DAMIEN PHELAN	
	16	20190095498		2019-03-28	SRINIVASAN SUDHIR KUMAR	
	17	20190095516		2019-03-28	SRINIVASAN SUDHIR KUMAR	
	18	20190306237		2019-10-03	SRINIVASAN SUDHIR KUMAR	
	19	20200076817		2020-03-05	GUPTA LOKESH	
	20	20200244638		2020-07-30	GUPTA LOKESH	
	21	20200264860		2020-08-20	SRINIVASAN SUDHIR KUMAR	
	22	20200265062		2020-08-20	SRINIVASAN SUDHIR KUMAR	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.T/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	16785423
Filing Date	2020-02-07
First Named Inventor	Bjorn Markus Jakobsson
Art Unit	2653
Examiner Name	Akelaw Teshale
Attorney Docket Number	MJAKP016C2

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							

If you wish to add additional Foreign Patent Document citation information please click the Add button Add

NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	Search Query Report from IP.com (performed 1/6/2020) (Year: 2020).	

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature	/AKELAW TESHALE/	Date Considered	03/15/2021

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.T/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Akelaw Teshale
	Attorney Docket Number	MJAKP016C2

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☒ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Yeu-Ting George Cheng/	Date (YYYY-MM-DD)	2021-03-05
Name/Print	Yeu-Ting George Cheng	Registration Number	69408

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.T/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.T/

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

21912 7590 02/03/2021
VAN PELT, YI & JAMES LLP
10050 N. FOOTHILL BLVD #200
CUPERTINO, CA 95014

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/785,423	02/07/2020	Bjorn Markus Jakobsson	MJAKP016C2	9490

TITLE OF INVENTION: VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$600	$0.00	$0.00	$600	05/03/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
TESHALE, AKELAW	2653	379-088200

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Van Pelt, Yi & James LLP
2
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE	(B) RESIDENCE: (CITY and STATE OR COUNTRY)
RightQuestion, LLC	Portola Valley, CA

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☑ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☑ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

☑ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. 50-0685

5. **Change in Entity Status** (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Yeu-Ting George Cheng/ Date April 12, 2021

Typed or printed name Yeu-Ting George Cheng Registration No. 69408

PTOL-85 Part B (08-18) Approved for use through 01/31/2020 OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

EX-1002
AT&T SERVICES INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS, AND NOKIA OF AMERICA CORPORATION v RIGHTQUESTION, LLC
0511

Electronic Patent Application Fee Transmittal

Application Number:	16785423
Filing Date:	07-Feb-2020
Title of Invention:	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA
First Named Inventor/Applicant Name:	Bjorn Markus Jakobsson
Filer:	Yeu-Ting George Cheng/Elaine Nguyen
Attorney Docket Number:	MJAKP016C2

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	2501	1	600	600

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**600**

Electronic Acknowledgement Receipt

EFS ID:	42433379
Application Number:	16785423
International Application Number:	
Confirmation Number:	9490
Title of Invention:	VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA
First Named Inventor/Applicant Name:	Bjorn Markus Jakobsson
Customer Number:	21912
Filer:	Yeu-Ting George Cheng/Elaine Nguyen
Filer Authorized By:	Yeu-Ting George Cheng
Attorney Docket Number:	MJAKP016C2
Receipt Date:	12-APR-2021
Filing Date:	07-FEB-2020
Time Stamp:	20:28:57
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$600
RAM confirmation Number	E20214BK29182034
Deposit Account	500685
Authorized User	Elaine Nguyen
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.16 (National application filing, search, and examination fees) 37 CFR 1.17 (Patent application and reexamination processing fees)	

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	MJAKP016C2_IF_Transmittal.pdf	93031 a7d8d20c394069a271bce90ef3cffc334fadc276	no	1
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30639 9e89bf89047a9285090b617c9439dd6dd76f14c9	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	123670		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

Change(s) applied to document, /J.M./ 2/24/2021

	147	20170005961		2017-01-05	~~McAfee, Inc.~~ Liebmann et al.	
	148	20170078321		2017-03-16	MAYLOR JACKIE	
	149	20170091274		2017-03-30	GUO SONGTAO	
	150	20170251006		2017-08-31	LAROSA VINCENT JAY	
	151	20170324767		2017-11-09	SRIVASTAVA MANOJ KUMAR	
	152	20170331816		2017-11-16	VOTAW ELIZABETH S	
	153	20170331824		2017-11-16	PENDER MARK A	
	154	20180160387		2018-06-07	CHASTAIN WALTER COOPER	
	155	20180184289		2018-06-28	DUDLEY WILLIAM	

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]¡	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]

EFS Web 2.1.18

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.T/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

	136	20150334065		2015-11-19	YAN DAVID	
	137	20150363839		2015-12-17	ZOLTY BARRY	
	138	20150371212		2015-12-24	GIORDANO JOSEPH	
Change(s) applied to document, /J.M./ 2/24/2021	139	20150381653		2015-12-31	~~Proofpoint, Inc.~~ Starink et al.	
	140	20160014151		2016-01-14	PRAKASH GAGAN	
	141	20160037270		2016-02-04	POLINSKE BEAU JAY	
	142	20160087925		2016-03-24	KALAVAGATTU ARAVIND	
	143	20160094566		2016-03-31	PAREKH SANJAY M	
	144	20160104132		2016-04-14	ABBATIELLO PIERPAOLO	
	145	20160225897		2016-08-04	SRIDHAR SEETHARAMAN	
	146	20160269437		2016-09-15	MCDOUGAL MONTY D	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.T/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16785423
	Filing Date	2020-02-07
	First Named Inventor	Bjorn Markus Jakobsson
	Art Unit	2653
	Examiner Name	Not Assigned
	Attorney Docket Number	MJAKP016C2

	114	20140082726		2014-03-20	DRELLER BRYAN P	
	115	20140214895		2014-07-31	HIGGINS JOHN M	
	116	20140230061		2014-08-14	HIGBEE AARON	
	117	20140245396		2014-08-28	OBERHEIDE JON	
	118	20140250506		2014-09-04	HALLAM-BAKER PHILLIP MARTIN	
	119	20140258420		2014-09-11	DENT TERRILL MARK	
Change(s) applied to document, /J.M./ 2/24/2021	120	20140259158		2014-09-11	BANK OF AMERICA CORPORATION Brown et al.	
	121	20140340822		2014-11-20	LAL DHANANJAY	
	122	20140366144		2014-12-11	ALPEROVITCH DMITRI	
	123	20150030156		2015-01-29	PEREZ JOHN S	
	124	20150033343		2015-01-29	JIANG WU	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.T/

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/785,423	05/11/2021	11005989	MJAKP016C2	9490

21912 7590 04/21/2021

VAN PELT, YI & JAMES LLP
10050 N. FOOTHILL BLVD #200
CUPERTINO, CA 95014

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

RightQuestion, LLC, Portola Valley, CA;
Bjorn Markus Jakobsson, Portola Valley, CA;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

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United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY.DOCKET NO./TITLE	REQUEST ID
16/785,423	02/07/2020	Bjorn Markus Jakobsson	MJAKP016C2	181548

Acknowledgement of Loss of Entitlement to Entity Status Discount

The entity status change request below filed through Private PAIR on 01/06/2023 has been accepted.

CERTIFICATIONS:

Change of Entity Status:

X Applicant changing to regular undiscounted fee status.

NOTE: Checking this box will be taken to be notification of loss of entitlement to small or micro entity status, as applicable.

This portion must be completed by the signatory or signatories making the entity status change in accordance with 37 CFR 1.4(d)(4).

Signature:	/Yeu-Ting George Cheng/
Name:	Yeu-Ting George Cheng
Registration Number:	69408

UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
16/785,423	**10/14/2024 10:49:22 AM Z ET**	**MJAKP016C2**

Title of Invention

VALIDATING AUTOMATIC NUMBER IDENTIFICATION DATA

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	11005989
CONFIRMATION #	9490	FILED BY	Kelly Smoker
PATENT CENTER #	67551265	FILING DATE	02/07/2020
CUSTOMER #	21912	FIRST NAMED INVENTOR	Bjorn Markus Jakobsson
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Michael Haynes

Documents

TOTAL DOCUMENTS: 3

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
1281-007_20241014_POA-S.pdf	1	Power of Attorney	180 KB
1281-007_20241014_373 Statement-S.pdf	3	Assignee showing of ownership per 37 CFR 3.73	115 KB
1281-007_20241014_Fee Address Form.pdf	2	Maintenance Fee Address Change	264 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
1281-007_20241014_POA-S.pdf	97A45AE15212B05EAFBDE87F702A274E03E14906C308CF567DEA5A895A9DC6192EA8ED5EE80ACBEA4BF7885F04DEF091

	CDFEDA1910A1851FD5E571C902AE84BC
1281-007_20241014_373 Statement-S.pdf	57601504CCE624B159934ACA36030AB27116014E3A42756885 11DE3EAEA4DCDE6AC28221A10431E4C07653538F4BF554C5 76B90301633137B577FDFA74CE48F7
1281-007_20241014_Fee Address Form.pdf	92159D7235F8BCC19F3116C6DF0DA91D060EFBC1BCDABB59 0FB04712E304174FA9BAB38C55D84191E3C64F20BBAA7E83B 505114D250E48278FC3113D70036A98

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/AIA/96 (08-12)
Approved for use through 01/31/2013. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: RightQuestion, LLC c/o The INNW Fund

Application No./Patent No.: 14/535,064 Filed/Issue Date: 6 November 2014

Titled: Validating Automatic Number Identification Data

RightQuestion, LLC, a LLC

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☑ The assignee of the entire right, title, and interest.

2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):

☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.

☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (*e.g.*, bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

A. ☑ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 033653, Frame 0778, or for which a copy thereof is attached.

B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450**.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/AIA/96 (08-12)
Approved for use through 01/31/2013. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☐ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Michael N. Haynes/	14 October 2024
Signature	Date
Michael N. Haynes	40014
Printed or Typed Name	Title or Registration Number

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/AIA/80 (07-12)
Approved for use through 11/30/2014. OMB 0651-0035
U.S. Patent and Trademark Office: U.S DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:

☒ Practitioners associated with Customer Number: 34060

OR

☐ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignments documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

☐ The address associated with Customer Number:

OR

☐

Firm or Individual Name			
Address			
City		State	Zip
Country			
Telephone		Email	

Assignee Name and Address: RightQuestion, LLC
c/o The INNW Fund
250 Oak Grove Ave, #202
Menlo Park, CA 94025

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be Filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of The practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature	[signature]	Date	Oct. 11, 2024
Name	Robert Levenson	Telephone	
Title	Secretary, INNW Fund		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Doc Code: MFEE.C.AD
Document Description: Maintenance Fee Address Change

PTO/AIA/47 (11-21)
Approved for use through 11/30/2024. OMB 0651-0016
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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"FEE ADDRESS" INDICATION FORM

Address to:
Mail Stop Maintenance Fee
Director of the United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

-OR-

Fax to:
571-273-6500

INSTRUCTIONS: The issue fee must have been paid for the application(s) listed on this form. In addition, only an address represented by a Customer Number can be established as the fee address for maintenance fee purposes (hereafter, fee address). A fee address should be established when correspondence related to maintenance fees should be mailed to a different address than the correspondence address for the application.

When to check the first box below: If you have a Customer Number to represent the fee address.

When to check the second box below: If you have no Customer Number representing the desired fee address, in which case a completed Request for Customer Number (PTO/SB/125) must be attached to this form. For more information on Customer Numbers, see the Manual of Patent Examining Procedure (MPEP) § 403.

For the following listed application(s), please recognize as the "Fee Address" under the provisions of 37 CFR 1.363 the address associated with:

☑ Customer Number: 34060

OR

☐ The attached Request for Customer Number form (PTO/SB/125)

PATENT NUMBER (if known)	APPLICATION NUMBER
11,005,989	

Completed by (check one):

☐ Applicant/Inventor

☑ Attorney or Agent of record 40014 (Reg. No.)

☐ Assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(c) (Form PTO/AIA/96) is enclosed or was filed on _____ (Date)

/Michael N. Haynes/
Signature

Michael N. Haynes
Typed or printed name

4349729988
Requester's telephone number

14 October 2024
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. If the assignee is a juristic entity, this form must be signed by a patent practitioner (attorney or agent) of record. Submit multiple forms if more than one signature is required, see below*.

☐ *Total of _____ forms are submitted

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995, unless the information collection has a currently valid OMB Control Number. The OMB Control Number for this information collection is 0651-0016. Public burden for this form is estimated to average 5 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Chief Administrative Officer, United States Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450 or email InformationCollection@uspto.gov. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS.** SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. The United States Patent and Trademark Office (USPTO) collects the information in this record under authority of 35 U.S.C. 2. The USPTO's system of records is used to manage all applicant and owner information including name, citizenship, residence, post office address, and other information with respect to inventors and their legal representatives pertaining to the applicant's/owner's activities in connection with the invention for which a patent is sought or has been granted. The applicable Privacy Act System of Records Notice for the information collected in this form is COMMERCE/PAT-TM-7 Patent Application Files, available in the Federal Register at 78 FR 19243 (March 29, 2013). https://www.govinfo.gov/content/pkg/FR-2013-03-29/pdf/2013-07341.pdf

Routine uses of the information in this record may include disclosure to: 1) law enforcement, in the event that the system of records indicates a violation or potential violation of law; 2) a Federal, state, local, or international agency, in response to its request; 3) a contractor of the USPTO having need for the information in order to perform a contract; 4) the Department of Justice for determination of whether the Freedom of Information Act (FOIA) requires disclosure of the record; 5) a Member of Congress submitting a request involving an individual to whom the record pertains, when the individual has requested the Member's assistance with respect to the subject matter of the record; 6) a court, magistrate, or administrative tribunal, in the course of presenting evidence, including disclosures to opposing counsel in the course of settlement negotiations; 7) the Administrator, General Services Administration (GSA), or their designee, during an inspection of records conducted by GSA under authority of 44 U.S.C. 2904 and 2906, in accordance with the GSA regulations and any other relevant (i.e., GSA or Commerce) directive, where such disclosure shall not be used to make determinations about individuals; 8) another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)); 9) the Office of Personnel Management (OPM) for personnel research purposes; and 9) the Office of Management and Budget (OMB) for legislative coordination and clearance.

If you do not furnish the information requested on this form, the USPTO may not be able to process and/or examine your submission, which may result in termination of proceedings, abandonment of the application, and/or expiration of the patent.

Additional Uses

Additional USPTO uses of the information in this record may include disclosure to: 1) the International Bureau of the World Intellectual Property Organization, if the record is related to an international application filed under the Patent Cooperation Treaty; 2) the public i) after publication of the application pursuant to 35 U.S.C. 122(b), ii) after issuance of a patent pursuant to 35 U.S.C. 151, iii) if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections, or an issued patent, or iv) without publication of the application or patent under the specific circumstances provided for by 37 CFR 1.14(a)(1)(v)-(vii); and/or 3) the National Archives and Records Administration, for inspection of records.
https://www.govinfo.gov/content/pkg/FR-2013-03-29pdf/2013-07341.pdf

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/785,423	02/07/2020	Bjorn Markus Jakobsson	MJAKP016C2

CONFIRMATION NO. 9490

34060
MICHAEL N. HAYNES
P.O. Box 460
RUCKERSVILLE, VA 22968

POA ACCEPTANCE LETTER

OC000000079618658

Date Mailed: 10/22/2024

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 10/14/2024.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/sltorres/

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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/785,423	02/07/2020	Bjorn Markus Jakobsson	MJAKP016C2

CONFIRMATION NO. 9490

21912
VAN PELT, YI & JAMES LLP
1 1ST ST, STE 12
LOS ALTOS, CA 94022

POWER OF ATTORNEY NOTICE

OC000000079618638

Date Mailed: 10/22/2024

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 10/14/2024.

- The Power of Attorney to you in this application has been revoked by the applicant. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

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