

SYSTEMS AND METHODS FOR IDENTITY ATOMIZATION AND USAGE

CROSS REFERENCE TO RELATED APPLICATIONS

[01] This application claims priority to U.S. Provisional Patent Application No. 62/519,440, filed on June 14, 2017; is a continuation-in-part of and claims priority to U.S. Patent Application No. 15/922,505, filed on March 15, 2018, which claims priority to U.S. Provisional Patent Application No. 62/490,818, filed on April 27, 2017, and U.S. Provisional Patent Application No. 62/506,090, filed on May 15, 2017; and claims priority to U.S. Patent Application No. 16/007,581, filed on June 13, 2018; each of the above applications being hereby incorporated by reference herein in their entireties.

BACKGROUND INFORMATION

[02] In many types of transactions, and other scenarios, an individual must provide identity information to conduct the transaction. For example, to purchase alcohol, an individual is typically required to display a state identification, such as a state driver's license.

[03] One problem prevalent in many such transactions is that the required identification actually contains more information about the individual than is legally or otherwise required to conduct the transaction. For example, to purchase alcohol, all that is legally required to be presented is proof that the person is over the legal age to purchase alcohol, an image associated with the proof that looks like the person, and proof that the presented information is valid. However, when a person displays a state driver's license, they are actually displaying much more personal information than this, including their address, their exact date of birth, the driver's license number, an organ donor status, etc.

[04] Presenting more personal information than is necessary during a transaction has many privacy-related downsides that are desirable to avoid. Continuing the above example, when the person presents the state driver's license to purchase alcohol, oversharing of personal information such as their address may subject them to negative consequences such as stalking.

[05] Thus, a need exists for systems and methods to provide identity information for conducting transactions that limits the provided information to only that required by the transaction.

SUMMARY OF THE INVENTION

[05a] According to a first aspect of the invention, there is provided a method of providing identity information, the method comprising: receiving, from a transaction system, a request regarding a transaction; retrieving at least one rule defining a compliant identity based on a type of the transaction associated with the request, the at least one rule identifying a plurality of identity attributes; retrieving an identity index map including a list of pointers to available identity components; selecting pointers from the identity index map pointing to identity components corresponding to the plurality of identity attributes identified by the at least one rule; outputting, to the transaction system, the compliant identity including information corresponding to each of the identity components, the information including for each of the identity components at least one of: the selected pointers to the identity component, or the identity component.

[05b] According to a second aspect of the invention, there is provided a method of providing identity information, the method comprising: receiving identity information for an individual; processing the received identity information to identify an identity type of the identity information; retrieving a stored identity type definition based on the identity type, the identity type definition including a plurality of attributes of the identity type; atomizing the identity information into a plurality of identity information components based on the plurality of attributes of the identity type; distributing the identity information components to a plurality of different storage locations; and generating and storing an identity information index including a list of pointers to the distributed identity information components.

[05c] According to a third aspect of the invention, there is provided a system, comprising: at least one non-transitory machine readable storage medium having program instructions, mapping rules, and an index map; and at least one processor configured to execute the program instructions to perform a method of providing identity information, the method including: receiving, from a transaction system, a request regarding a transaction; retrieving at least one rule defining a compliant identity based on a type of the transaction associated with the request, the at least one rule identifying a plurality of identity attributes; retrieving an identity index map including a list of pointers to available identity components; selecting pointers from the identity index map pointing to identity components corresponding to the plurality of identity attributes identified by the at least one rule; outputting, to the transaction system, the compliant identity including information corresponding to each of the identity components, the information including for each of the identity components at least one of: the selected pointers to the identity component, or the identity component.

[05d] According to a fourth aspect of the invention, there is provided a system, comprising:
at least one non-transitory machine readable storage medium having program instructions;
and at least one processor configured to execute the program instructions to perform a
method of providing identity information, the method including: receiving identity
5 information for an individual; processing the received identity information to identify an
identity type of the identity information; retrieving a stored identity type definition based on
the identity type, the identity type definition including a plurality of attributes of the identity
type; atomizing the identity information into a plurality of identity information components
based on the plurality of attributes of the identity type; distributing the identity information
10 components to a plurality of different storage locations; and generating and storing an
identity information index including a list of pointers to the distributed identity information
component.

BRIEF DESCRIPTION OF THE DRAWINGS

WHAT IS CLAIMED IS:

1. A method of providing identity information, the method comprising:
receiving, from a transaction system, a request regarding a transaction;
retrieving at least one rule defining a compliant identity based on a type of the transaction associated with the request, the at least one rule identifying a plurality of identity attributes;
retrieving an identity index map including a list of pointers to available identity components;
selecting pointers from the identity index map pointing to identity components corresponding to the plurality of identity attributes identified by the at least one rule;
outputting, to the transaction system, the compliant identity including information corresponding to each of the identity components, the information including for each of the identity components at least one of: the selected pointers to the identity component, or the identity component.
2. The method of claim 1, wherein the outputting the compliant identity outputs information for identity components corresponding to attributes of plurality of different sets of identity information.
3. The method of claim 1, wherein the outputting the compliant identity outputs information for identity components corresponding to at least some but less than a complete set of attributes of a set of identity information.
4. The method of claim 1, further comprising conducting the transaction based on the provided compliant identity.
5. The method of claim 4, wherein conducting the transaction includes at least one of:
conducting the transaction to gain access to a restricted area based on the provided compliant identity, or
conducting a financial transaction based on the provided compliant identity.

6. The method of claim 1, wherein receiving the request includes receiving the request at a communication interface from the transaction system.
7. The method of claim 1, wherein outputting the compliant identity includes outputting the compliant identity to the transaction at a communication interface.
8. The method of claim 1, wherein outputting the compliant identity includes at least one of: transmitting the compliant identity to the transaction system, or displaying the compliant identity to the transaction system.
9. The method of claim 1, wherein the request includes an identification of the type of the transaction.
10. The method of claim 1, further comprising determining the type of the transaction based on the request.
11. The method of claim 1, further comprising:
 - receiving identity information for a plurality of different sets of identity information of a plurality of different identity types;
 - retrieving stored identity type definitions for the plurality of different identity types, the identity type definitions defining a plurality of attributes of the corresponding identity type;
 - atomizing the identity information of each of the plurality of different sets of identity information into the available atomized identity information based on the plurality of identity type definitions.
12. The method of claim 1, further comprising:
 - receiving identity information for an individual;
 - processing the received identity information to identify an identity type of the identity information;
 - retrieving a stored identity type definition based on the identity type, the identity type definition defining a plurality of attributes of the identity type;
 - atomizing the identity information into a plurality of identity components based on the plurality of attributes of the identity type;

encrypting the identity information components;
distributing the identity information components to a plurality of different storage systems;
generating and storing an identity information index including a list of pointers to the distributed identity information components.

13. The method of claim 12, wherein receiving the identity information includes at least one of: capturing an image of the identity information, or receiving a transmission of the identity information.

14. A method of providing identity information, the method comprising:
receiving identity information for an individual;
processing the received identity information to identify an identity type of the identity information;
retrieving a stored identity type definition based on the identity type, the identity type definition including a plurality of attributes of the identity type;
atomizing the identity information into a plurality of identity information components based on the plurality of attributes of the identity type;
distributing the identity information components to a plurality of different storage locations; and
generating and storing an identity information index including a list of pointers to the distributed identity information components.

15. The method of claim 14, wherein receiving the identity information includes at least one of: capturing an image of the identity information, or receiving a transmission of the identity information.

16. The method of claim 14, further comprising:
receiving, from a transaction system, a request regarding a transaction;
retrieving at least one rule defining a compliant identity based on a type of the transaction associated with the request, the at least one rule identifying a plurality of identity attributes;
retrieving an identity index map including a list of pointers to available identity components;
selecting pointers from the identity index map pointing to identity components corresponding to the plurality of identity attributes identified by the at least one rule;

outputting, to the transaction system, the compliant identity including information corresponding to each of the identity components, the information including for each of the identity components at least one of: the selected pointers to the identity component, or the identity component.

17. The method of claim 16, wherein at least one of:

the outputting the compliant identity outputs information for identity components corresponding to attributes of plurality of different sets of identity information.

the outputting the compliant identity outputs information for identity components corresponding to at least some but less than a complete set of attributes of a set of identity information.

18. A system, comprising:

at least one non-transitory machine readable storage medium having program instructions, mapping rules, and an index map; and

at least one processor configured to execute the program instructions to perform a method of providing identity information, the method including:

receiving, from a transaction system, a request regarding a transaction;

retrieving at least one rule defining a compliant identity based on a type of the transaction associated with the request, the at least one rule identifying a plurality of identity attributes;

retrieving an identity index map including a list of pointers to available identity components;

selecting pointers from the identity index map pointing to identity components corresponding to the plurality of identity attributes identified by the at least one rule;

outputting, to the transaction system, the compliant identity including information corresponding to each of the identity components, the information including for each of the identity components at least one of: the selected pointers to the identity component, or the identity component.

19. The system of claim 18, wherein at least one of:

the outputting the compliant identity outputs information for identity components corresponding to attributes of plurality of different sets of identity information.

the outputting the compliant identity outputs information for identity components corresponding to at least some but less than a complete set of attributes of a set of identity information.

20. A system, comprising:

at least one non-transitory machine readable storage medium having program instructions; and

at least one processor configured to execute the program instructions to perform a method of providing identity information, the method including:

receiving identity information for an individual;

processing the received identity information to identify an identity type of the identity information;

retrieving a stored identity type definition based on the identity type, the identity type definition including a plurality of attributes of the identity type;

atomizing the identity information into a plurality of identity information components based on the plurality of attributes of the identity type;

distributing the identity information components to a plurality of different storage locations; and

generating and storing an identity information index including a list of pointers to the distributed identity information component.