information, and specifies the camouflage information provider subsystem. Then the home delivery company subsystem acquires information necessary for the delivery such as an original address of a customer terminal and a name from purchaser camouflage information to deliver to the customer.

CITATION LIST

PATENT LITERATURE

[0004] Patent Literature 1: Japanese Laid-open Patent Publication No. 2005-4714

SUMMARY OF INVENTION

TECHNICAL PROBLEM

[0005] However, according to the configuration described in Patent Literature 1, there is a possibility that information linking between customer original information and the camouflage information is leaked out of the camouflage information provider subsystem by cyber-attack or unauthorized acquisition of information by an internal person. Namely, it is possible to acquire all necessary information by attacking one subsystem from a viewpoint of a person who tries to acquire information for unauthorized purposes. Accordingly, it becomes a soft target from a person who attempts the cyber-attack.

[0006] Embodiments of the present invention are made in consideration of the above-stated problems, and seek to improve robustness for leakage of personal information.

SOLUTION TO PROBLEM

[0007] A first aspect of the present invention provides a delivery management system which manages delivery of delivery articles, comprising:

a first accepting unit which accepts provisional information corresponding to true information regarding a delivery destination, and being different information from the true information;

a first storage unit which stores first identification information identifying the true information, and the provisional information while associating them;

a first specifying unit which specifies the first identification information based on the provisional information accepted by the first accepting unit, with referring the first storage unit;

a second storage unit which stores second identification information identifying the true information and being different from the first identification information, and the first identification information while associating them;

a second specifying unit which specifies the second identification information based on the first identification information specified by the first specifying unit, with referring the second storage unit;

a third storage unit which stores the second identification information and the true information while associating them; and

a third specifying unit which specifies the true information based on the second identification information specified by the second specifying unit, with referring the third storage unit,

wherein the first storage unit, the second storage unit and the third storage unit are located at different places from one another.

[0007a] A second aspect of the present invention provides a delivery management system, comprising: a first management device, a second management device, and a third management device each manage delivery of delivery articles,

wherein the first management device includes:

a first accepting unit which accepts provisional information corresponding to true information regarding a delivery destination, and being different information from the true information;

a first storage unit which stores first identification information identifying the true information and the provisional information while associating them; and

a first specifying unit which specifies the first identification information based on the provisional information accepted by the first accepting unit, with referring the first storage unit and,

wherein the second management device includes:

a second accepting unit which accepts the first identification information;

a second storage unit which stores second identification information identifying the true information and being different from the first identification information, and the first identification information while associating them; and

a second specifying unit which specifies the second identification information based on the first identification information accepted by the second accepting unit, with referring the second storage unit,

wherein the third management device includes:

a third accepting unit which accepts the second identification information;

a third storage unit which stores the second identification information and the true information while associating them; and

a third specifying unit which specifies the true

information based on the second identification information accepted by the third accepting unit, with referring the third storage unit.

[0007b] A third aspect of the present invention provides an information processing apparatus, comprising:

a first transmission unit which transmits true information regarding delivery to a first management device which manages the delivery of delivery articles;

a first receiving unit which receives first identification information issued for the true information from the first management device;

a second transmission unit which transmits the first identification information to a second management device which manages the delivery of the delivery articles;

a second receiving unit which receives second identification information issued for the first identification information from the second management device;

a third transmission unit which transmits the second identification information to a third management device which manages the delivery of the delivery articles;

a third receiving unit which receives provisional information issued for the second identification information from the third management device; and

a fourth transmission unit which transmits a delivery instruction of the delivery articles using the provisional information for a shipping origin of the delivery articles.

[0007c] A fourth aspect of the present invention provides a delivery management method which is executed by a delivery management system managing delivery of delivery articles, comprising:

a first accepting step which accepts provisional

information corresponding to true information regarding a delivery destination, and being different information from the true information;

a first specifying step which specifies a first identification information identifying the true information based on the provisional information accepted in the first accepting step, with referring a first storage unit storing the first identification information and the provisional information while associating them;

a second specifying step which specifies a second identification information identifying the true information and being different from the first identification information based on the first identification information specified by the first specifying step, with referring a second storage unit storing the second identification information and the first identification information while associating them; and

a third specifying step which specifies the true information based on the second identification information specified in the second specifying step, with referring a third storage unit storing the second identification information and the true information while associating them,

wherein the first storage unit, the second storage unit and the third storage unit are located at different places from one another.

[0007d] A fifth aspect of the present invention provides a delivery management method executed by an information processing apparatus, comprising:

a first transmission step which transmits true information regarding delivery to a first management device managing the delivery of delivery articles;

a first receiving step which receives first identification information issued for the true information from the first

management device;

a second transmission step which transmits the first identification information to a second management device managing the delivery of the delivery articles;

a second receiving step which receives second identification information issued for the first identification information from the second management device;

a third transmission step which transmits the second identification information to a third management device managing the delivery of the delivery articles;

a third receiving step which receives provisional information issued for the second identification information from the third management device; and

a fourth transmission step which transmits a delivery instruction of the delivery articles using the provisional information for a shipping origin of the delivery articles.

[0007e] A sixth aspect of the present invention provides a program for causing a computer to function as:

a first transmission unit which transmits true information regarding delivery to a first management device managing the delivery of delivery articles;

a first receiving unit which receives first identification information issued for the true information from the first management device;

a second transmission unit which transmits the first identification information to a second management device managing the delivery of the delivery articles;

a second receiving unit which receives second identification information issued for the first identification information from the second management device;

a third transmission unit which transmits the second identification information to a third management device managing

the delivery of the delivery articles;

a third receiving unit which receives provisional information issued for the second identification information from the third management device; and

a fourth transmission unit which transmits a delivery instruction of the delivery articles using the provisional information for a shipping origin of the delivery articles.

ADVANTAGEOUS EFFECTS OF INVENTION

[0008] According to the present invention, it is possible to improve robustness for leakage of personal information.

BRIEF DESCRIPTION OF DRAWINGS

[0009] [Fig. 1] Fig. 1 is a view illustrating an overall configuration of a delivery management system.

[Fig. 2] Fig. 2 is a view illustrating a hardware configuration of a user PC.

[Fig. 3] Fig. 3 is a flowchart illustrating a provisional address registration process.

[Fig. 4] Fig. 4 is a view illustrating an example of a data configuration of a true address DB.

[Fig. 5] Fig. 5 is a view illustrating a data configuration of an ID management DB.

[Fig. 6] Fig. 6 is a view illustrating a data configuration of a provisional address DB.

[Fig. 7] Fig. 7 is a flowchart illustrating a delivery management process of merchandises.

[Fig. 8] Fig. 8 is a flowchart illustrating a delivery management process according to a second embodiment.

[Fig. 9] Fig. 9 is a view illustrating an

CLAIMS

[Claim 1] A delivery management system which manages delivery of delivery articles, comprising:

a first accepting unit which accepts provisional information corresponding to true information regarding a delivery destination, and being different information from the true information;

a first storage unit which stores first identification information identifying the true information, and the provisional information while associating them;

a first specifying unit which specifies the first identification information based on the provisional information accepted by the first accepting unit, with referring the first storage unit;

a second storage unit which stores second identification information identifying the true information and being different from the first identification information, and the first identification information while associating them;

a second specifying unit which specifies the second identification information based on the first identification information specified by the first specifying unit, with referring the second storage unit;

a third storage unit which stores the second identification information and the true information while associating them; and

a third specifying unit which specifies the true information based on the second identification information specified by the second specifying unit, with referring the third storage unit,

wherein the first storage unit, the second storage unit and the third storage unit are located at different places from one another.

[Claim 2] The delivery management system according to claim 1, further comprising:

a first receiving unit which receives the true information from a user terminal;

a first issuance unit which issues the second identification information corresponding to the true information;

a first registration unit which registers the true information received by the first receiving unit and the second identification information issued by the first issuance unit to the third storage unit while associating them; and

a first transmission unit which transmits the second identification information to the user terminal.

[Claim 3] The delivery management system according to claim 2, further comprising:

a second receiving unit which receives an issuance request including the second identification information from the user terminal;

a second issuance unit which issues the first identification information relative to the second identification information shown in the issuance request;

a second registration unit which registers the second identification information shown in the issuance request and the first identification information issued by the second issuance unit to the second storage unit while associating them; and

a second transmission unit which transmits the first identification information to the user terminal.

[Claim 4] The delivery management system according to claim 3,

wherein the second issuance unit issues a plurality of first identification information for one second identification information.

[Claim 5] The delivery management system according to claim 3,

wherein the second receiving unit receives an issuance request including the second identification information and service identification information from the user terminal,

wherein the second issuance unit issues one first identification information for a combination of one second identification information shown in the issuance request and one service identification information, and

wherein the second transmission unit transmits the already issued first identification information for the combination of the already received second identification information and the service identification information to the user terminal when the issuance request including the combination of the received second identification information and the service identification information is received by the second receiving unit.

[Claim 6] The delivery management system according to any one of claims 3 to 5, further comprising:

a third receiving unit which receives an issuance request including the first identification information from the user terminal;

a third issuance unit which issues provisional information corresponding to the first identification information;

a third registration unit which registers the first identification information received by the third receiving unit and the provisional information issued by the third issuance unit to the first storage unit while associating them; and

a third transmission unit which transmits the provisional information to the user terminal.

[Claim 7] The delivery management system according to any one of claims 1 to 6,

wherein the true information is information indicating a

delivery destination address, and

wherein the provisional information is information indicating a provisional address.

[Claim 8] A delivery management system, comprising: a first management device, a second management device, and a third management device each manage delivery of delivery articles,

wherein the first management device includes:

a first accepting unit which accepts provisional information corresponding to true information regarding a delivery destination, and being different information from the true information;

a first storage unit which stores first identification information identifying the true information and the provisional information while associating them; and

a first specifying unit which specifies the first identification information based on the provisional information accepted by the first accepting unit, with referring the first storage unit and,

wherein the second management device includes:

a second accepting unit which accepts the first identification information;

a second storage unit which stores second identification information identifying the true information and being different from the first identification information, and the first identification information while associating them; and

a second specifying unit which specifies the second identification information based on the first identification information accepted by the second accepting unit, with referring the second storage unit,

wherein the third management device includes:

a third accepting unit which accepts the second identification information;

a third storage unit which stores the second identification information and the true information while associating them; and

a third specifying unit which specifies the true information based on the second identification information accepted by the third accepting unit, with referring the third storage unit.

[Claim 9] The delivery management system according to claim 8,

wherein the second accepting unit accepts input of the provisional information adhered on the delivery article,

wherein the third accepting unit accepts input of the first identification information adhered on the delivery article.

[Claim 10] An information processing apparatus, comprising:

a first transmission unit which transmits true information regarding delivery to a first management device which manages the delivery of delivery articles;

a first receiving unit which receives first identification information issued for the true information from the first management device;

a second transmission unit which transmits the first identification information to a second management device which manages the delivery of the delivery articles;

a second receiving unit which receives second identification information issued for the first identification information from the second management device;

a third transmission unit which transmits the second identification information to a third management device which manages the delivery of the delivery articles;

a third receiving unit which receives provisional information issued for the second identification information from the third management device; and

a fourth transmission unit which transmits a delivery

instruction of the delivery articles using the provisional information for a shipping origin of the delivery articles.

[Claim 11] A delivery management method which is executed by a delivery management system managing delivery of delivery articles, comprising:

a first accepting step which accepts provisional information corresponding to true information regarding a delivery destination, and being different information from the true information;

a first specifying step which specifies a first identification information identifying the true information based on the provisional information accepted in the first accepting step, with referring a first storage unit storing the first identification information and the provisional information while associating them;

a second specifying step which specifies a second identification information identifying the true information and being different from the first identification information based on the first identification information specified by the first specifying step, with referring a second storage unit storing the second identification information and the first identification information while associating them; and

a third specifying step which specifies the true information based on the second identification information specified in the second specifying step, with referring a third storage unit storing the second identification information and the true information while associating them,

wherein the first storage unit, the second storage unit and the third storage unit are located at different places from one another.

[Claim 12] A delivery management method executed by an information processing apparatus, comprising:

a first transmission step which transmits true information regarding delivery to a first management device managing the delivery of delivery articles;

a first receiving step which receives first identification information issued for the true information from the first management device;

a second transmission step which transmits the first identification information to a second management device managing the delivery of the delivery articles;

a second receiving step which receives second identification information issued for the first identification information from the second management device;

a third transmission step which transmits the second identification information to a third management device managing the delivery of the delivery articles;

a third receiving step which receives provisional information issued for the second identification information from the third management device; and

a fourth transmission step which transmits a delivery instruction of the delivery articles using the provisional information for a shipping origin of the delivery articles.

[Claim 13] A program for causing a computer to function as:

a first transmission unit which transmits true information regarding delivery to a first management device managing the delivery of delivery articles;

a first receiving unit which receives first identification information issued for the true information from the first management device;

a second transmission unit which transmits the first identification information to a second management device managing

the delivery of the delivery articles;

a second receiving unit which receives second identification information issued for the first identification information from the second management device;

a third transmission unit which transmits the second identification information to a third management device managing the delivery of the delivery articles;

a third receiving unit which receives provisional information issued for the second identification information from the third management device; and

a fourth transmission unit which transmits a delivery instruction of the delivery articles using the provisional information for a shipping origin of the delivery articles.