

DESCRIPTION

Title of Invention

5 DISTRIBUTION CONTAINER MANAGEMENT SYSTEM,
DISTRIBUTION CONTAINER MANAGEMENT METHOD, AND
DISTRIBUTION CONTAINER MANAGEMENT PROGRAM

Technical Field

10 [0001] The present invention relates to a distribution container
management system, a distribution container management method, and
a distribution container management program for managing distribution
containers shipped and received between a plurality of sites.

Background Art

15 [0002] Conventionally, a distribution container, such as a pallet, for
conveying articles to be transported all together has been used to
improve transportation efficiency. As a use form of such a distribution
container, there is a so-called distribution container rental system where
distribution containers with which articles to be transported are loaded
20 depart from a shipping site of one company, the articles to be
transported are unloaded at an receiving site of the company, and after
that, the distribution containers are used by another company. When
the distribution containers are shared between different companies in
this way, each company can own (rent), at each site, the distribution
25 containers by an amount desired to be used at a time desired to be used.
Further, each company does not require a space for storing the

distribution containers, thereby improving efficiency.

[0003] In a system where the distribution containers are shipped and received between the sites, such as this distribution container rental system, a distribution container management system constituted by an information processor is used in order to accurately manage the number of shipment-and-receipt of the distribution containers at each site (see, for example, Patent Literature 1).

Citation List

Patent Literature

[0004] Patent Literature 1: Japanese Unexamined Patent Publication No. 2003-246456

Summary of Invention

Technical Problem

[0005] Incidentally, in order to appropriately manage distribution containers owned by a distribution container rental company, it is preferable that the company correctly grasp a site inventory indicating the number of distribution containers which exist for each site and an asset inventory (an overall inventory) indicating the total number of distribution containers serving as management targets (i.e., distribution containers owned by the company as asset). In a case where all of the distribution containers serving as the management targets exist at any of the sites, that is, in a case where the distribution containers that move between the sites do not exist, the total number of site inventories of the respective sites and the asset inventory coincide with each other.

[0006] For example, the site inventory is managed as follows. When the distribution containers are shipped or received at each site, shipment information or receipt information indicating the number of shipped or received distribution containers is transmitted from each site to a device provided at a center for controlling management of the distribution containers. The device on the center side updates information of the site inventory based on the shipment information or the receipt information received from each site. Meanwhile, the asset inventory is updated (increased or decreased) when the company produces new distribution containers or discards old or damaged distribution containers.

[0007] Here, in order to appropriately manage both of the site inventory and the asset inventory, it is preferable to manage the site inventory and the asset inventory in a matched state rather than manage them separately. However, a mismatch between the site inventory and the asset inventory can occur due to various factors. For example, the number of shipment of the distribution containers and the number of receipt thereof concerning the same shipment-and-receipt should normally coincide with each other. However, for example, a case where the distribution containers are lost in a period from the time when they are shipped to the time when they are received can be considered. In this case, the total number of the site inventories of the respective sites changes (decreases) between before and after the loss of the distribution containers, and the asset inventory does not change until normal discard processing is performed. Accordingly, a mismatch occurs between the site inventories and the asset inventory.

[0008] Further, in a case where the distribution containers are being moved, that is, after the distribution containers are shipped from the shipping site and before they are received at the receiving site, the number of distribution containers during the movement is not reflected on the total number of the site inventories of the respective sites. This causes a gap between the total number of site inventories of the respective sites and the asset inventory. Further, since timing at which the information is transmitted from each site to the device on the center side depends on each site, a case where the device on the center side receives the receipt information from the receiving site before receiving shipment information from the shipping site can be considered. In such a case, since a decreased amount (a shipped amount) is not reflected on the site inventory concerning the shipping site, a gap occurs between the total number of site inventories of the respective sites and the asset inventory.

[0009] As described above, since the gap can occur between the total number of the site inventories of the respective sites and the asset inventory due to various causes, there is a problem in that it is not easy to manage the site inventories and the asset inventory in a matched state.

[0010] In order to solve the above-described problem, an object of the present invention is to provide a distribution container management system, a distribution container management method, and a distribution container management program where it is easy to manage site inventories and an asset inventory in a matched state.

Solution to Problem

[0011] A distribution container management system according to the present invention is a distribution container management system for managing distribution containers shipped and received between a plurality of sites, including: inventory storage means for storing an asset inventory indicating a total number of the distribution containers serving as management objects, a site inventory indicating a number of the distribution containers which exist for the respective sites, and an adjustment inventory indicating a gap quantity between a shipping quantity and a receiving quantity of the distribution containers for each shipment-and-receipt; shipment-and-receipt information acquisition means for acquiring shipment information which associates information indicating a shipping site with information indicating the shipping quantity of the distribution containers or receipt information which associates information indicating a receiving site with information indicating the receiving quantity of the distribution containers; shipment-and-receipt-specific information acquisition means for acquiring shipment-and-receipt-specific information which specifies shipment-and-receipt associated with the shipment information or the receipt information acquired by the shipment-and-receipt information acquisition means; inventory update means for updating the site inventory of the shipping site or the receiving site based on the shipment information or the receipt information acquired by the shipment-and-receipt information acquisition means; and adjustment inventory calculation means for calculating the adjustment inventory about the shipment-and-receipt specified by the

shipment-and-receipt-specific information acquired by the shipment-and-receipt-specific information acquisition means based on the shipment information or the receipt information acquired by the shipment-and-receipt information acquisition means, and for storing the adjustment inventory in the inventory storage means.

[0012] In the distribution container management system according to the present invention, the site inventory of the shipping site or the receiving site is updated by acquiring the shipment information or the receipt information at each site. Further, the shipment-and-receipt associated with the shipment information or the receipt information acquired (a series of shipment-and-receipt processing where the distribution containers are shipped from a certain shipping site and received at a certain receiving site) is specified, and the adjustment inventory indicating the gap quantity between the shipping quantity and the receiving quantity about the specified shipment-and-receipt is stored. Therefore, according to the distribution container management system pertaining to the present invention, a breakdown of the gap which occurs between the total number of site inventories of the respective sites and the asset inventory can be grasped as the adjustment inventory for each shipment-and-receipt. Accordingly, the site inventories and the asset inventory are easily managed in a matched state.

[0013] In the distribution container management system, the shipment-and-receipt-specific information may include information indicating a scheduled receipt point in time about the shipment-and-receipt, and in a case where the shipment information is

acquired and the receipt information is not acquired by the shipment-and-receipt information acquisition means, the adjustment inventory calculation means may acquire information indicating a present point in time and compare the present point in time and the scheduled receipt point in time included in the shipment-and-receipt-specific information, and in a case where the present point in time is prior to the scheduled receipt point in time, the adjustment inventory calculation means may associate information indicating that the distribution containers are being moved with the adjustment inventory about the shipment-and-receipt specified by the shipment-and-receipt-specific information.

[0014] According to the above-described configuration, in a case where the gap occurs between the shipping quantity and the receiving quantity caused by movement of the distribution containers (for example, during shipping by a truck) from the shipping site to the receiving site about a certain shipment-and-receipt, a cause for the gap can be accurately grasped. In other words, it is possible to accurately grasp that the gap between the shipping quantity and the receiving quantity about the shipment-and-receipt is a gap caused by a trouble, such as loss of the distribution containers, or a gap caused by movement pertaining to the shipment-and-receipt.

[0015] In the distribution container management system, the shipment-and-receipt-specific information may include section information indicating a section of the shipment-and-receipt, the section information may be any of a movement section indicating that the asset inventory is not changed, an asset input section indicating that the asset

inventory is increased by the receiving quantity of the distribution containers associated with the receipt information, and an asset exclusion section indicating that the asset inventory is decreased by the shipping quantity of the distribution containers associated with the shipment information, and the inventory update means may refer to the section information included in the shipment-and-receipt-specific information, and in a case where the section information is the asset input section or the asset exclusion section, the inventory update means may increase or decrease the asset inventory according to the section information.

[0016] According to the above-described configuration, since the asset input section is allocated for the receipt of the distribution containers caused by, for example, production/stocking of new distribution containers, the asset inventory can be appropriately increased by the inventory update means. Further, since the asset exclusion section is allocated for the shipment of the distribution containers caused by, for example, disposal of distribution containers, the asset inventory can be appropriately decreased by the inventory update means. In other words, the asset inventory can be appropriately updated together with the site inventory according to the section information associated with the shipment-and-receipt. With this configuration, it is possible to reduce the labor taken in a case where the asset inventory and the site inventory are separately managed (updated or the like). Further, it is possible to eliminate a possibility that a mismatch occurs between the asset inventory and the site inventory due to the update mistake or the like of the one inventory.

[0017] In the distribution container management system, the adjustment inventory calculation means may refer to the section information included in the shipment-and-receipt-specific information, and determine whether to calculate the adjustment inventory based on the section information.

[0018] As mentioned above, it is preferable that the gap which occurs between the shipping quantity and the receiving quantity in the shipment-and-receipt where the distribution containers move from a certain site to a certain site (the shipment-and-receipt pertaining to the movement section) be managed as the adjustment inventory. On the other hand, the gap which occurs in a case where the shipment or the receipt for the asset input or the asset exclusion (the shipment-and-receipt pertaining to the asset input section or the asset exclusion section) is performed is not a gap which causes a mismatch between the site inventory and the asset inventory. Consequently, there is no need to manage the gap as the adjustment inventory. According to the above-described configuration, since whether to calculate the adjustment inventory is determined based on the section information, the adjustment inventory can be calculated only in a case where it is preferable to calculate the adjustment inventory. With this configuration, only the gap to be managed as the adjustment inventory can be appropriately managed.

[0019] Incidentally, in addition to being mentioned as an invention of the distribution container management system as described above, the present invention can be mentioned as inventions of a distribution container management method executed by the distribution container

management system and of a distribution container management program as described below. Since these inventions are only in different categories and substantially the same invention, similar actions and effects are achieved.

5 [0020] In other words, a distribution container management method according to the present invention is a distribution container management method executed by a distribution container management system for managing distribution containers shipped and received between a plurality of sites, the distribution container management
10 system including inventory storage means for storing an asset inventory indicating a total number of the distribution containers serving as management objects, a site inventory indicating a number of the distribution containers which exist for the respective sites, and an adjustment inventory indicating a gap quantity between a shipping
15 quantity and a receiving quantity of the distribution containers for each shipment-and-receipt, including: a shipment-and-receipt information acquisition step of acquiring shipment information which associates information indicating a shipping site with information indicating the shipping quantity of the distribution containers or receipt information
20 which associates information indicating an receiving site with information indicating the receiving quantity of the distribution containers; a shipment-and-receipt-specific information acquisition step of acquiring shipment-and-receipt-specific information which specifies shipment-and-receipt associated with the shipment information or the
25 receipt information acquired in the shipment-and-receipt information acquisition step; an inventory update step of updating the site inventory

of the shipping site or the receiving site based on the shipment information or the receipt information acquired in the shipment-and-receipt information acquisition step; and an adjustment inventory calculation step of calculating the adjustment inventory about the shipment-and-receipt specified by the shipment-and-receipt-specific information acquired in the shipment-and-receipt-specific information acquisition step based on the shipment information or the receipt information acquired in the shipment-and-receipt information acquisition step, and of storing the adjustment inventory in the inventory storage means.

[0021] Further, a distribution container management program according to the present invention causes a computer to function as: inventory storage means for storing an asset inventory indicating a total number of the distribution containers serving as management objects, a site inventory indicating a number of the distribution containers which exist for the respective sites, and an adjustment inventory indicating a gap quantity between a shipping quantity and a receiving quantity of the distribution containers for each shipment-and-receipt; shipment-and-receipt information acquisition means for acquiring shipment information which associates information indicating a shipping site with information indicating the shipping quantity of the distribution containers or receipt information which associates information indicating a receiving site with information indicating the receiving quantity of the distribution containers; shipment-and-receipt-specific information acquisition means for acquiring shipment-and-receipt-specific information which specifies

shipment-and-receipt associated with the shipment information or the receipt information acquired by the shipment-and-receipt information acquisition means; inventory update means for updating the site inventory of the shipping site or the receiving site based on the shipment information or the receipt information acquired by the shipment-and-receipt information acquisition means; and adjustment inventory calculation means for calculating the adjustment inventory about the shipment-and-receipt specified by the shipment-and-receipt-specific information acquired by the shipment-and-receipt-specific information acquisition means based on the shipment information or the receipt information acquired by the shipment-and-receipt information acquisition means, and for storing the adjustment inventory in the inventory storage means.

Advantageous Effects of Invention

[0022] According to the present invention, since a gap which occurs between the total number of site inventories of respective sites and an asset inventory can be easily grasped, it is easy to manage the site inventories and the asset inventory in a matched state.

Brief Description of Drawings

[0023] FIG. 1 is a block diagram illustrating a function configuration of a distribution container management system according to one embodiment of the present invention.

FIG. 2(a) is a diagram illustrating an example of shipment information, and FIG. 2(b) is a diagram illustrating an example of

receipt information.

FIG. 3 is a diagram illustrating an example of movement schedule information.

5 FIG. 4(a) is a diagram illustrating movement content information, and FIG. 4(b) is a diagram illustrating an example of an adjustment inventory.

10 FIG. 5(a) is a diagram illustrating an example of an asset inventory, site inventories, and a mismatch quantity (an adjustment inventory) before shipment-and-receipt, and FIG. 5(b) is a diagram illustrating an example of the asset inventory, the site inventories, and the mismatch quantity (the adjustment inventory) after the shipment-and-receipt.

FIG. 6 is a diagram illustrating an example of section information.

15 FIG. 7 is a diagram illustrating an example of a mismatch section of the adjustment inventory.

FIGS. 8(a) and 8(b) are diagrams for explaining a change in the adjustment inventory in a series of shipment-and-receipt processing.

20 FIGS. 9(a) and 9(b) are diagrams for explaining changes in the adjustment inventories in the series of shipment-and-receipt processing.

FIG. 10 is a flowchart illustrating operation of the distribution container management system according to the present embodiment.

25 FIG. 11 is a block diagram illustrating a function configuration of a distribution container management program according to one embodiment of the present invention.

Description of Embodiments

[0024] A distribution container management system, a distribution container management method, and a distribution container management program according to one embodiment of the present invention will be described with reference to the drawings. It should be noted that identical reference signs are assigned to identical parts, and duplicated description thereof is omitted, if possible.

[0025] FIG. 1 is a diagram illustrating a function configuration of the distribution container management system according to the embodiment of the present invention. A distribution container management system 1 according to the present embodiment is a system for managing distribution containers shipped and received between a plurality of sites. The distribution container management system 1 is, for example, disposed so as to be capable of being utilized in a center for controlling management of the distribution containers, or the like. The distribution container is a cargo box or a container used when transporting an article to be transported, and is specifically, for example, a pallet or a container. The distribution container management system 1 is a system which executes processing for managing an asset inventory and site inventories of the distribution containers managed and owned by a company in a matched state based on shipment information or receipt information at each site. In order to explain about this, the asset inventory, the site inventory, and an adjustment inventory managed by the distribution container management system 1 will be first described.

[0026] The asset inventory (an overall inventory) indicates the total

number of distribution containers serving as management targets. In other words, the asset inventory indicates the total number of distribution containers owned by the company as asset. The asset inventory is not changed by shipment-and-receipt of the distribution containers between the sites. When the distribution containers serving as the asset of the company are increased or decreased, such as when the company produces or stocks new distribution containers, or discard old or damaged distribution containers, the asset inventory is updated. A manager can grasp the total number of distribution containers owned as the asset by referring to the asset inventory.

[0027] The site inventory indicates the number of distribution containers which actually exist for each site. The site inventory of each site is changed by the shipment-and-receipt of the distribution containers. By referring to the site inventory, the manager can grasp the number of distribution containers which exist at each site in nearly real time. Incidentally, a reason why “nearly real time” is used herein for explanation is that a time lag can occur between timing when the distribution containers are shipped and received between the sites and timing when update processing of the site inventory is performed by the manager or the like.

[0028] The adjustment inventory indicates a gap quantity (a mismatch quantity) between a shipping quantity and an receiving quantity of the distribution containers for each shipment-and-receipt. “Shipment-and-receipt” mentioned herein indicates a series of shipment-and-receipt processing where the distribution containers are shipped from a certain shipping site and received at a certain receiving

site.

[0029] In a case where all of the distribution containers serving as management targets exist at any of the sites, that is, in a case where the distribution containers that move between the sites do not exist, the total number of site inventories of the respective sites and the asset inventory coincide with each other. However, a case where the distribution containers are lost during the movement due to the shipment-and-receipt can be considered. In this case, since the asset inventory is not changed until normal discard processing is performed, the total number of the site inventories of the respective sites is smaller than the asset inventory by the number of lost distribution containers. Further, in a case where the distribution containers are being moved, that is, after the distribution containers are shipped from the shipping site and before they are received at the receiving site, the number of distribution containers during the movement is not reflected on the total number of the site inventories of the respective sites. In other words, it is possible that while the site inventory of the shipping site is decreased by the number of shipment as compared with the site inventory before the shipment-and-receipt, the site inventory of the receiving site is in the same state as the site inventory before the shipment-and-receipt. In other words, the total number of the site inventories of the respective sites is smaller than the asset inventory by the number of distribution containers during the movement. Therefore, a manager cannot grasp a breakdown of the gap between the total number of the site inventories of the respective sites and the asset inventory by just referring to the asset inventory and the site inventories.

[0030] The distribution container management system 1 according to the present embodiment is a system capable of grasping a breakdown of a gap between the total number of the site inventories of respective sites and an asset inventory as an adjustment inventory for each shipment-and-receipt by appropriately managing the asset inventory, the site inventories, and the adjustment inventory. As illustrated in FIG. 1, in order to achieve the above-described object, the distribution container management system 1 includes an inventory storage part 11, a shipment-and-receipt information acquisition part 12, a shipment-and-receipt-specific information acquisition part 13, an inventory update part 14, and an adjustment inventory calculation part 15. In the present embodiment, the shipment-and-receipt information at each site is input to a terminal for management (a site terminal 2) provided at each site by a manager or the like at each site. Alternatively, it may be configured that an RFID tag which holds identification information for uniquely specifying each distribution container is stuck to an individual distribution container, and when the distribution container is shipped or received, an RFID reader provided at each site reads the RFID tag on the distribution container. In this case, the identification information items read by the RFID readers at the respective sites are collected, for example, at the site terminal 2 and summed up on the site terminal 2 for each classification of the distribution containers (e.g., a pallet or a container), thereby the shipment-and-receipt information is prepared. The distribution container management system 1 can communicate with the site terminal 2 at each site through a communication network, such as the Internet,

and can receive the shipment-and-receipt information input to the site terminal 2.

[0031] The distribution container management system 1 is physically, for example, configured as a computer system which includes one or more CPUs, an RAM and an ROM serving as main memory storages, input units, such as a keyboard and a mouse, serving as input devices, an output unit, such as a display, a communication module, such as a network card, serving as a data transmission and reception device, and auxiliary storages, such as a hard disk drive and a semiconductor memory. The distribution container management system 1 may be physically configured as one device or may be configured by a plurality of devices which operates in cooperation.

[0032] For example, by reading predetermined computer software on hardware, such as the CPU and the RAM, the input unit, the output unit, and the communication module are operated under the control of the CPU, and reading and writing of data in the RAM and the auxiliary storages is performed. Accordingly, functions of the distribution container management system 1 are realized. Subsequently, the respective functions of the distribution container management system 1 will be described.

[0033] The inventory storage part 11 is inventory storage means for storing the asset inventory, the site inventory, and the adjustment inventory. For example, physically, the inventory storage part 11 may be configured as a single database device or may be configured by a plurality of data base devices. The asset inventory and the site inventory stored in the inventory storage part 11 are updated by the

inventory update part 14, and the adjustment inventory is generated or updated by the adjustment inventory calculation part 15.

[0034] FIG. 5(a) is a diagram illustrating an example of an asset inventory, site inventories, and a mismatch quantity (an adjustment inventory) stored in the inventory storage part 11. As illustrated in FIG. 5(a), the asset inventory, the site inventories of the respective sites, and the mismatch quantity are managed for each classification of the distribution containers (articles). In FIG. 5(a), a numerical value in a “warehouse A” row indicates the site inventory for each classification of the distribution containers in the warehouse A, and a numerical value in a “store B” row indicates the site inventory for each classification of the distribution containers in the store B. Here, each of “warehouse A” and “store B” is one site of the plurality of sites. Further, in FIG. 5(a), a “mismatch quantity (adjustment inventory)” row indicates only the mismatch quantity about a specific shipment-and-receipt (one shipment-and-receipt from the warehouse A to the store B). Practically, the mismatch quantity is calculated by the adjustment inventory calculation part 15 for each shipment-and-receipt where the mismatch occurs between the shipping quantity and the receiving quantity, and is stored in the inventory storage part 11. It should be noted that a case where classification of the distribution containers is two types; “pallet” and “container”, is illustrated in this example. However, the classification of the distribution containers is not limited to this. For example, the distribution containers of the same type (e.g., “pallets”) with different model numbers or the like may be managed as separate classification.

[0035] The shipment-and-receipt information acquisition part 12 is shipment-and-receipt information acquisition means for acquiring shipment information which associates information indicating the shipping site with information indicating the shipping quantity of the distribution containers or receipt information which associates information indicating the receiving site with information indicating the receiving quantity of the distribution containers. As mentioned above, in the present embodiment, the shipment-and-receipt information acquisition part 12 receives the shipment information or the receipt information input to each site terminal 2 by the manager or the like at each site from each site terminal 2 via the communication network or the like.

[0036] FIGS. 2(a) and 2(b) are diagrams illustrating examples of the shipment information and the receipt information associated with the same shipment-and-receipt. As illustrated in FIGS. 2(a) and 2(b), in the present embodiment, one piece of shipment information or receipt information is prepared for each shipment or receipt delivered by, for example, the same truck. In other words, in the present embodiment, information about the shipment or the receipt of the distribution containers having different classification, such as pallets or containers, is associated with the one piece of shipment information or receipt information.

[0037] As illustrated in FIG. 2(a), the shipment information is associated with information indicating a data number for identifying (uniquely specifying) shipment, a shipping site, and a shipping date (an actually shipped date). Additionally, for each classification of the

distribution containers to be shipped, the shipment information is associated with information indicating a data number for identifying the shipment, an article name indicating the classification of the distribution containers to be shipped, and a shipping quantity of the distribution containers in this classification. The shipment information illustrated in FIG. 2(a) indicates that the data number for identifying the shipment is "9999-1", the shipping site is "warehouse A", and the shipping date is "December 1". Further, concerning the pallet (the distribution container whose article name is "pallet"), this shipment information indicates that the data number for identifying the shipment is "9999-1-1" and the shipping quantity is "100". Further, concerning the container (the distribution container whose article name is "container"), this shipment information indicates that the data number for identifying the shipment is "9999-1-2" and the shipping quantity is "300". Here, information items which are common to all of the classified distribution containers (the shipping site and the shipping date) and information items for each distribution container (the article name and the shipping quantity) are associated with each other by the data numbers associated with the respective information items. Further, the data number associated with the shipment information ("9999-1" in the above-described example) is, for example, a number determined according to a delivery plan or the like previously made by a manager or the like, and is mutually associated with the receipt information to be paired and movement schedule information, which will be described below.

[0038] As illustrated in FIG. 2(b), the receipt information is associated

with information indicating a data number for identifying receipt, a receiving site, and a receiving date (an actually received date). Additionally, for each classification of the distribution container to be received, the receipt information is associated with information indicating a data number for identifying the receipt, an article name indicating the classification of the distribution containers to be received, and a receiving quantity of the distribution containers in this classification. The receipt information illustrated in FIG. 2(b) indicates that the data number for identifying the receipt is “9999-2”, the receiving site is “store B”, and the receiving date is “December 3”. Further, concerning the pallet, this receipt information indicates that the data number for identifying the receipt is “9999-2-1” and the receiving quantity is “90”. Further, concerning the container, this shipment information indicates that the data number for identifying the receipt is “9999-2-2” and the receiving quantity is “320”. Here, information items which are common to all of the classified distribution containers (the receiving site and the receiving date) and information items for each distribution container (the article name and the receiving quantity) are associated with each other by the data numbers associated with the respective information items. Further, the data number associated with the receipt information (“9999-2” in the above-described example) is, for example, a number determined according to a delivery plan or the like previously made by a manager or the like, and is mutually associated with the shipment information to be paired and the movement schedule information, which will be described below.

[0039] The shipment-and-receipt-specific information acquisition part

13 is shipment-and-receipt-specific information acquisition means for
acquiring shipment-and-receipt-specific information which specifies
shipment-and-receipt associated with the shipment information or the
receipt information acquired by the shipment-and-receipt information
5 acquisition part 12. For example, with respect to any shipment
information (or receipt information), the shipment-and-receipt-specific
information may be any information capable of specifying
shipment-and-receipt associated with the shipment information (or the
receipt information). Here, the specified "shipment-and-receipt" is
10 information capable of at least specifying receipt information (shipment
information) paired with the shipment information (or the receipt
information). For example, as mentioned above, in a case where the
shipment information, the receipt information, and the movement
schedule information, which will be described below, are mutually
15 associated by the respective data numbers, the data numbers themselves
included in the shipment information or the receipt information can
correspond to the shipment-and-receipt-specific information.

[0040] In the present embodiment, as illustrated in FIG. 3, the
shipment-and-receipt-specific information is described as the movement
20 schedule information (information indicating a schedule of the
shipment-and-receipt) registered by the manager or the like based on the
delivery plan previously determined before the shipment-and-receipt.
Here, the shipment-and-receipt-specific information illustrated in FIG. 3
is information which specifies the shipment-and-receipt associated with
25 the shipment information and the receipt information illustrated in
FIGS. 2. The movement schedule information (the

shipment-and-receipt-specific information) is associated with information indicating a data number for identifying the shipment-and-receipt to be scheduled, a shipping site, a receiving site, a scheduled shipping date, a scheduled receiving date, and section information (which will be described below in detail). Additionally, for each classification of the distribution containers to be shipped and received, the movement schedule information is associated with information indicating a data number for identifying the shipment-and-receipt, an article name indicating the classification of the distribution containers to be shipped and received, and a quantity pertaining to the shipment-and-receipt of the distribution containers in this classification.

[0041] The movement schedule information illustrated in FIG. 3 indicates that the data number is "100", the shipping site is "warehouse A", the receiving site is "store B", the scheduled shipping date is "December 1", the scheduled receiving date is "December 3", and the section information is "movement" (a movement section). Further, concerning the pallet, this movement schedule information indicates that a data number for identifying the shipment-and-receipt is "100-1" and a quantity pertaining to the shipment-and-receipt is "100". Further, concerning the container, this movement schedule information indicates that a data number for identifying the shipment-and-receipt is "100-2" and a quantity pertaining to the shipment-and-receipt is "300".

[0042] The movement schedule information is, for example, registered and stored in a predetermined database (not illustrated) which can be referred to by the shipment-and-receipt-specific information acquisition

part 13. As mentioned above, in the present embodiment, the shipment information, the receipt information, and the movement schedule information are mutually associated by the respective data numbers. In other words, the data numbers of the shipment information and the receipt information are set so as to be associated with the data number of the movement schedule information about the corresponding shipment-and-receipt. In this case, the shipment-and-receipt-specific information acquisition part 13 can acquire the movement schedule information about the shipment-and-receipt associated with the shipment information or the receipt information based on the data number included in the shipment information or the receipt information.

[0043] The inventory update part 14 is inventory update means for updating a site inventory of the shipping site or the receiving site based on the shipment information or the receipt information acquired by the shipment-and-receipt information acquisition part 12. Specifically, the inventory update part 14 acquires the shipment information or the receipt information from the shipment-and-receipt information acquisition part 12, and executes the following processing on a case where the shipment information is acquired and on a case where the receipt information is acquired, respectively.

[0044] In the case where the shipment information is acquired, the inventory update part 14 decreases the site inventory for each classification of the distribution containers at the shipping site by the shipping quantity for each classification of the distribution containers based on the shipping site and the shipping quantity for each

classification of the distribution containers associated with the shipment information. On the other hand, in the case where the receipt information is acquired, the inventory update part 14 increases the site inventory for each classification of the distribution containers at the receiving site by the receiving quantity for each classification of the distribution containers based on the receiving site and the receiving quantity for each classification of the distribution containers associated with the receipt information.

[0045] Update processing of the site inventory by the inventory update part 14 will be concretely described by using FIGS. 2 and 5. FIG. 5(a) is a diagram illustrating an example of an asset inventory, site inventories, and a mismatch quantity (an adjustment inventory) before shipment-and-receipt, and FIG. 5(b) is a diagram illustrating an example of the asset inventory, the site inventories, and the mismatch quantity (the adjustment inventory) after the shipment-and-receipt.

[0046] A case where the inventory update part 14 acquires the shipment information of the warehouse A illustrated in FIG. 2(a) from the shipment-and-receipt information acquisition part 12 is considered. In this case, as illustrated in FIGS. 5(a) and 5(b), the inventory update part 14 decreases the site inventory of the pallets in the warehouse A before the shipment “1000” by the shipping quantity of the pallets “100” to obtain “900”. Similarly, the inventory update part 14 decreases the site inventory of the containers in the warehouse A before the shipment “500” by the shipping quantity of the containers “300” to obtain “200”.

[0047] A case where the inventory update part 14 acquires the receipt information of the store B illustrated in FIG. 2(b) from the

shipment-and-receipt information acquisition part 12 is considered. In this case, as illustrated in FIGS. 5(a) and 5(b), the inventory update part 14 increases the site inventory of the pallets in the store B before the receipt "1000" by the shipping quantity of the pallets "90" to obtain "1090". Similarly, the inventory update part 14 increases the site inventory of the containers in the store B before the receipt "500" by the receiving quantity of the containers "320" to obtain "820".

[0048] Next, the section information associated with the movement schedule information will be described. The section information is information indicating a section of the shipment-and-receipt associated with the movement schedule information. The section information is set by, for example, the manager who registers the movement schedule information. Specifically, as illustrated in FIG. 6, the section information is any of a movement section indicating that the asset inventory is not changed, an asset input section indicating that the asset inventory is increased by the receiving quantity of the distribution containers associated with the receipt information, and an asset exclusion section indicating that the asset inventory is decreased by the shipping quantity of the distribution containers associated with the shipment information.

[0049] The movement section is a section indicating ordinary shipment-and-receipt where distribution containers are shipped from one site and received at another site. As mentioned above, in such ordinary shipment-and-receipt, the asset inventory is not changed. Accordingly, in a case where the section information included in the movement schedule information is "movement" (the movement

section), the inventory update part 14 does not update the asset inventory while updating the site inventories, as mentioned above.

[0050] The asset input section is set in association with receipt for asset input where the number of distribution containers serving as the asset owned by the company is increased. In a case where the section information included in the movement schedule information is the asset input section, the inventory update part 14 increases the asset inventory based on the receipt information associated with the shipment-and-receipt (practically receipt only) indicated by the movement schedule information. Specifically, the inventory update part 14 increases the asset inventory of the distribution containers in each classification by the receiving quantity of the distribution containers in each classification associated with the receipt information. With this configuration, since the asset input section is allocated for the receipt of the distribution containers caused by, for example, production/stocking of new distribution containers (receipt of new distribution containers to a production site or a stocking site), the asset inventory can be appropriately increased by the inventory update part 14.

[0051] In a case where the distribution containers serving as the asset are input, it is necessary to not only increase the asset inventory, but also increase the site inventory of the production site or the stocking site. In a case where the update of the asset inventory and the site inventory accompanied by such asset input is separately performed on the asset inventory and the site inventory, there is a problem in that manager's labor increases. Further, there is a problem in that a mismatch between

the asset inventory and the site inventory may be caused by an update mistake, a failure to update, and the like of one inventory. On the other hand, according to the aforementioned inventory update part 14, since the asset input section is set to the section information of the movement schedule information indicating the receipt at the production site or the stocking site, both of the site inventory and the asset inventory are properly updated, thereby solving the aforementioned problems. In other words, it is possible to reduce the labor taken in a case where the asset inventory and the site inventory are separately managed (updated or the like), and it is possible to eliminate a possibility that a mismatch occurs between the asset inventory and the site inventory due to the update mistake or the like of the one inventory.

[0052] The asset exclusion section is set in association with shipment for asset exclusion where the number of distribution containers serving as the asset owned by the company is decreased. In a case where the section information included in the movement schedule information is the asset exclusion section, the inventory update part 14 decreases the asset inventory based on the shipment information associated with the shipment-and-receipt (practically shipment only) indicated by the movement schedule information. Specifically, the inventory update part 14 decreases the asset inventory of the distribution containers in each classification by the shipping quantity of the distribution containers in each classification associated with the shipment information. With this configuration, since the asset exclusion section is allocated for the shipment of the distribution containers caused by, for example, disposal of the distribution containers (movement of the

distribution containers from a site where the distribution containers to be discarded are held (a disposal site) to a disposal site), the asset inventory can be appropriately decreased by the inventory update part 14.

5 [0053] In a case where the distribution containers serving as the asset are excluded, it is necessary to not only decrease the asset inventory, but also decrease the site inventory of the disposal site. In a case where the update of the asset inventory and the site inventory accompanied by such asset exclusion is separately performed on the asset inventory and
10 the site inventory, there is a problem in that manager's labor increases. Further, there is also a problem in that a mismatch between the asset inventory and the site inventory may be caused by an update mistake, a failure to update, and the like of one inventory. On the other hand, according to the aforementioned inventory update part 14, since the
15 asset exclusion section is set to the section information of the movement schedule information indicating the shipment from the disposal site, both of the site inventory and the asset inventory are properly updated, thereby solving the aforementioned problems. In other words, it is possible to reduce the labor taken in a case where the asset inventory
20 and the site inventory are separately managed (updated or the like), and it is possible to eliminate a possibility that a mismatch occurs between the asset inventory and the site inventory due to the update mistake or the like of the one inventory.

[0054] The adjustment inventory calculation part 15 is adjustment
25 inventory calculation means where the mismatch quantity (the adjustment inventory) about the shipment-and-receipt specified by the

movement schedule information acquired by the shipment-and-receipt-specific information acquisition part 13 is calculated based on the shipment information or the receipt information acquired by the shipment-and-receipt information acquisition part 12, and the mismatch quantity (the adjustment inventory) is stored in the inventory storage part 11.

[0055] For example, the adjustment inventory calculation part 15 inputs the shipment information or the receipt information acquired by the shipment-and-receipt information acquisition part 12, and also inputs the movement schedule information acquired by the shipment-and-receipt-specific information acquisition part 13. The adjustment inventory calculation part 15 generates movement content information illustrated in FIG. 4(a) by mutually associating these pieces of information. However, it is not essential to generate such movement content information for calculating the mismatch quantity. In other words, the adjustment inventory calculation part 15 may associate the shipment information or the receipt information with the movement schedule information and directly calculate the mismatch quantity without generating the movement content information.

[0056] As illustrated in FIG. 4(a), the movement content information indicates a content of actually performed shipment-and-receipt. The movement content information is associated with information indicating a data number for identifying actually performed shipment-and-receipt, a shipping site, a receiving site, a shipping date (an actual shipping date), a receiving date (an actual receiving date), and section information. The data number of the movement content information is

set based on a rule previously determined by the manager or the like. The shipping site and the shipping date associated with the shipment information are set to the shipping site and the shipping date of the movement content information. The receiving site and the receiving date associated with the receipt information are set to the receiving site and the receiving date of the movement content information. The section information associated with the movement schedule information is set to the section information of the movement content information. Additionally, for each classification of the distribution containers pertaining to the shipment-and-receipt, the movement content information is associated with information indicating a data number for identifying the shipment-and-receipt, an article name indicating the classification of the distribution containers, a shipping quantity of the distribution containers in this classification, a receiving quantity of the distribution containers in this classification. The data number of the distribution containers in each classification is set based on a rule previously determined by the manager or the like. An article name associated with the shipment information or the receipt information is set to the article name of the movement content information.

[0057] The shipping date and the shipping quantity for each classification of the distribution containers associated with the shipment information are set to the shipping date and the shipping quantity for each distribution container of the movement content information. However, in a case where the shipment information does not exist (a case where the section information is the asset input section) or in a case where the shipment information is not acquired by the

shipment-and-receipt information acquisition part 12 at a point in time when the movement content information is generated, the shipping date of the movement content information is not set, and “0” is set to the shipping quantity as a default value.

5 [0058] The receiving date and the receiving quantity for each classification of the distribution containers associated with the receipt information are set to the receiving date and the receiving quantity for each classification of the distribution containers of the movement content information. However, in a case where the receipt information
10 does not exist (a case where the section information is the asset exclusion section) or in a case where the receipt information is not acquired by the shipment-and-receipt information acquisition part 12 at the point in time when the movement content information is generated, the receiving date of the movement content information is not set, and
15 “0” is set to the receiving quantity as a default value.

[0059] The movement schedule information illustrated in FIG. 4(a) indicates that the data number is “555”, the shipping site is “warehouse A”, the receiving site is “store B”, the shipping date is “December 1”, the receiving date is “December 3”, and the section information is
20 “movement” (a movement section). Further, concerning the pallet, this movement content information indicates that the data number for identifying the shipment-and-receipt is “555-1”, the shipping quantity is “100”, and the receiving quantity is “90”. Further, concerning the container, this movement content information indicates that the data
25 number for identifying the shipment-and-receipt is “555-2”, the shipping quantity is “300”, and the receiving quantity is “320”.

[0060] The adjustment inventory calculation part 15 calculates the adjustment inventory for each classification of the distribution containers based on the movement content information generated in this way, and stores the calculated adjustment inventory in the inventory storage part 11. Specifically, the adjustment inventory calculation part 15 calculates a mismatch quantity (a gap quantity) between the shipping quantity and the receiving quantity by subtracting the receiving quantity from the shipping quantity for each classification of the distribution containers associated with the movement content information.

[0061] Further, the adjustment inventory calculation part 15 may refer to the section information included in the movement schedule information and determine whether the adjustment inventory is calculated based on the section information. Specifically, in a case where the section information is the movement section, the adjustment inventory calculation part 15 may determine that the adjustment inventory is calculated and execute the aforementioned calculation processing of the adjustment inventory. On the other hand, in a case where the section information is the asset input section or the asset exclusion section, the adjustment inventory calculation part 15 may determine that the adjustment inventory is not calculated. An effect of executing such determination by the adjustment inventory calculation part 15 will be described below.

[0062] As mentioned above, it is preferable that the gap which occurs between the shipping quantity and the receiving quantity in the shipment-and-receipt where the distribution containers move from a certain site to a certain site (the shipment-and-receipt pertaining to the

movement section) be managed as the adjustment inventory. On the other hand, since the gap which occurs in a case of performing the shipment or the receipt for the asset input or the asset exclusion (the shipment-and-receipt pertaining to the asset input section or the asset exclusion section) is not a gap which causes a mismatch between the site inventory and the asset inventory, there is no need to manage the gap as the adjustment inventory. According to the above-described configuration, since the adjustment inventory calculation part 15 determines whether to calculate the adjustment inventory based on the section information, the adjustment inventory can be calculated only in a case where it is preferable to calculate the adjustment inventory. With this configuration, only the gap to be managed as the adjustment inventory can be appropriately managed.

[0063] FIG. 4(b) is a diagram illustrating an example of information stored in association with each other as an adjustment inventory. In the present embodiment, the adjustment inventory pertaining to one shipment-and-receipt is associated with, for each classification of the distribution containers pertaining to the shipment-and-receipt information indicating a data number for identifying the adjustment inventory, a mismatch section, and an article name indicating the classification of the distribution containers together with the mismatch quantity. Here, the mismatch section is information indicating a cause for the gap between the shipping quantity and the receiving quantity. Details of the mismatch section will be described below.

[0064] In a case where the shipment information is acquired and the receipt information is not acquired by the shipment-and-receipt

information acquisition part 12, the adjustment inventory calculation part 15 acquires information indicating a present point in time, and compares the present point in time and a scheduled receiving date (a scheduled receipt point in time) included in the movement schedule information. Then, in a case where the present point in time is earlier than the scheduled receiving date, the adjustment inventory calculation part 15 associates information indicating that the distribution containers are being moved with the adjustment inventory about the shipment-and-receipt specified by the movement schedule information. In other words, the adjustment inventory calculation part 15 sets the information indicating that the distribution containers are being moved (“during shipping” in FIG. 7) as the mismatch section associated with the adjustment inventory. With this configuration, in a case where a gap occurs between the shipping quantity and the receiving quantity caused by movement of the distribution containers (for example, during shipping by a truck) from the shipping site to the receiving site about a certain shipment-and-receipt, a cause for the gap can be accurately grasped. In other words, it is possible to accurately grasp that the gap between the shipping quantity and the receiving quantity about the shipment-and-receipt is a gap caused by a trouble, such as loss of the distribution containers, or a gap caused by movement pertaining to the shipment-and-receipt. It should be noted that the adjustment inventory calculation part 15 can acquire the information indicating the present point in time by, for example, acquiring information indicating a hardware time of the distribution container management system 1.

[0065] Further, in a case where the mismatch section is other than the

case corresponding to “during shipping” and the shipping quantity is larger than the receiving quantity, the adjustment inventory calculation part 15 may set information indicating that the shipping quantity is larger than the receiving quantity (“shipping quantity > receiving quantity” in FIG. 7) to the mismatch section. Further, in a case where the shipping date is later than the receiving date due to, for example, an input mistake of the shipment information or the receipt information by a site manager, the adjustment inventory calculation part 15 may set information indicating that the shipping date is later than the receiving date (“shipping date > receiving date” in FIG. 7) to the mismatch section. Further, in a case where the mismatch is other than the case corresponding to above-described “shipping date > receiving date” and the shipping quantity is smaller than the receiving quantity, the adjustment inventory calculation part 15 may set information indicating that the shipping quantity is smaller than the receiving quantity (“shipping quantity < receiving quantity” in FIG. 7) to the mismatch section.

[0066] Further, in a case where the section information associated with the movement schedule information is the movement section and the receipt information is not acquired while the shipment information is acquired by the shipment-and-receipt information acquisition part 12 after the scheduled receiving date, the adjustment inventory calculation part 15 may set information indicating that the receipt information which should have been normally acquired has not been acquired (“shipment content exists/receipt content does not exist” in FIG. 7) to the mismatch section (update the adjustment inventory already stored in

the inventory storage part 11).

[0067] Further, in a case where the section information associated with the movement schedule information is the movement section and the receipt information is acquired prior to a state in which the shipment information is not acquired by the shipment-and-receipt information acquisition part 12, regardless of the scheduled receiving date, the adjustment inventory calculation part 15 may set information indicating that the shipment information which should have been normally acquired has not been acquired (“shipment content does not exist/receipt content exists” in FIG. 7) to the mismatch section (update the adjustment inventory already stored in the inventory storage part 11).

[0068] Further, as for the shipment-and-receipt where the section information pertains to the asset input section (“receipt content exists” in FIG. 7) or the asset exclusion section (“shipment content exists” in FIG. 7), the adjustment inventory calculation part 15 may determine whether update of the site inventories (“shipment inventory” and “receipt inventory” in FIG. 7) and the asset inventory (“overall inventory” in FIG. 7) is completed, and set the mismatch section according to a confirmed situation (see mismatch sections with IDs 6 to 9 in FIG. 7). In order to determine whether update of the site inventories and the asset inventory is completed, for example, the adjustment inventory calculation part 15 may perform as follows. For example, when update of the site inventories and the asset inventory is completed, the inventory update part 14 may give respective update completion notices of the site inventories and the asset inventory to the adjustment inventory calculation part 15. In this case, the adjustment

inventory calculation part 15 can determine whether the update processing of the respective inventories is completed by receiving the respective update completion notices of the site inventories and the asset inventory from the inventory update part 14.

5 [0069] As described above, the adjustment inventory calculation part 15 associates the mismatch section illustrated in FIG. 7 with the adjustment inventory based on the scheduled receiving date, the shipping date, the receiving date, the shipping quantity, the receiving quantity, the section information, the update situation of the site inventory or the asset
10 inventory, and the like. With this configuration, the manager can grasp the adjustment inventory for each cause for mismatch by, for example, searching the adjustment inventory using the section information as a search key.

[0070] Next, an example of changes of an adjustment inventory in a
15 series of shipment-and-receipt processing will be described by using FIGS. 8 and 9. FIG. 8(a) illustrates movement schedule information previously registered before shipment-and-receipt. This movement schedule information is information indicating a schedule about ordinary shipment-and-receipt (the movement section) where 100
20 pallets are shipped from the warehouse A on December 1 and received in the store B on December 3.

[0071] In a situation where such movement schedule information is registered, a case where 100 pallets are shipped from the warehouse A on December 1 as scheduled is considered. In this case, the
25 shipment-and-receipt information acquisition part 12 acquires shipment information pertaining to the shipment (see shipment information in

FIG. 8(b)) from the site terminal 2 in the warehouse A serving as the shipping site. Then, the movement schedule information illustrated in FIG. 8(a) is acquired by the shipment-and-receipt-specific information acquisition part 13. At this point in time, since the pallets shipped from the warehouse A are not received in the store B, receipt information associated with the shipment information does not exist. In other words, at this point in time, a shipping quantity of pallets is “100” and an receiving quantity thereof is “0”. Accordingly, an adjustment inventory where a mismatch quantity is “100 (= 100 – 0)” (see FIG. 8(b)) is generated by the adjustment inventory calculation part 15. Here, since the present date (December 1) is prior to the scheduled receiving date (December 3), “during shipment” is set to a mismatch section of the adjustment inventory in the aforementioned processing of the adjustment inventory calculation part 15.

[0072] Subsequently, a case where 90 of 100 pallets shipped from the warehouse A on December 3 are received in the store B (a case where 10 pallets are lost) is considered. In this case, the shipment-and-receipt information acquisition part 12 acquires receipt information pertaining to the receipt (receipt information in FIG. 9(a)) from the site terminal 2 in the store B serving as the receiving site. After that, an adjustment inventory where a mismatch quantity is “10 (= 100 – 90)” (see FIG. 9(a)) is generated by the adjustment inventory calculation part 15. Here, since the present date (December 3) is not prior to the scheduled receiving date (December 3) and the shipping quantity is larger than the receiving quantity, “shipping quantity > receiving quantity” is set to the mismatch section of the adjustment

inventory in the aforementioned processing of the adjustment inventory calculation part 15.

[0073] Then, a case where 10 pallets thought to be lost at the receiving site are found in the store B is considered. In this case, the shipment-and-receipt information acquisition part 12 acquires receipt information after correction (receipt information in FIG. 9(b)) from the site terminal 2 in the store B serving as the receiving site. After that, the mismatch quantity is calculated as "0 (= 100 - 100)" by the adjustment inventory calculation part 15, and a gap between the shipping quantity and the receiving quantity is eliminated. In this way, in a case where the gap between the shipping quantity and the receiving quantity is eliminated, it is no longer necessary to store the adjustment inventory in the inventory storage part 11. Accordingly, in a case where the mismatch quantity of the adjustment inventory becomes "0" due to correction of the shipment information or the receipt information or the like, the adjustment inventory calculation part 15 may delete the adjustment inventory from the inventory storage part 11.

[0074] Next, operation of the distribution container management system 1 including the distribution container management method according to the one embodiment of the present invention will be described using FIG. 10.

[0075] First, shipment information or receipt information is acquired by the shipment-and-receipt information acquisition part 12 (step S1, a shipment-and-receipt information acquisition step). Then, movement schedule information for specifying shipment-and-receipt associated with the shipment information or the receipt information acquired by the

shipment-and-receipt information acquisition part 12
(shipment-and-receipt-specific information) is acquired by the
shipment-and-receipt-specific information acquisition part 13 (step S2, a
shipment-and-receipt-specific information acquisition step). Next, a
5 site inventory of the shipping site or the receiving site is updated by the
inventory update part 14 based on the shipment information or the
receipt information acquired by the shipment-and-receipt information
acquisition part 12 (step S3, an inventory update step). It should be
noted that, in step S3, in a case where the section information of the
10 shipment-and-receipt associated with the shipment information or the
receipt information is an asset input section or an asset exclusion
section, the asset inventory is also updated by the inventory update part
14, as mentioned above. Then, the adjustment inventory about the
shipment-and-receipt specified by the movement schedule information
15 acquired by the shipment-and-receipt-specific information acquisition
part 13 is calculated by the adjustment inventory calculation part 15
based on the shipment information or the receipt information acquired
by the shipment-and-receipt information acquisition part 12, and the
adjustment inventory is stored in the inventory storage part 11 (step S4,
20 an adjustment inventory calculation step).

[0076] Next, a distribution container management program P1
according to the one embodiment of the present invention will be
described using FIG. 11. The distribution container management
program P1 is a program for causing a computer to function as the
25 distribution container management system 1. FIG. 11 is a block
diagram illustrating a module configuration of the distribution container

management program P1. As illustrated in FIG. 11, the distribution container management program P1 includes an inventory storage module P11, a shipment-and-receipt information acquisition module P12, a shipment-and-receipt-specific information acquisition module P13, an inventory update module P14, and an adjustment inventory calculation module P15. Functions realized by executing the inventory storage module P11, the shipment-and-receipt information acquisition module P12, the shipment-and-receipt-specific information acquisition module P13, the inventory update module P14, and the adjustment inventory calculation module P15 are the same as the functions of the inventory storage part 11, the shipment-and-receipt information acquisition part 12, the shipment-and-receipt-specific information acquisition part 13, the inventory update part 14, and the adjustment inventory calculation part 15 of the distribution container management system 1, respectively.

[0077] The distribution container management program P1 configured in this way is stored in a recording medium, such as a CD-ROM, a DVD, and an HD, and is executed by the computer used as the distribution container management system 1. Specifically, the computer includes a recording medium reading part, such as a CD-ROM drive, a DVD drive, and an HDD. When the recording medium is set in the recording medium reading part, the computer is accessible to the distribution container management program P1 stored in the recording medium from the recording medium reading part. Then, the computer can be operated as the distribution container management system 1 by allowing the computer to execute the

distribution container management program P1.

[0078] It should be noted that the distribution container management program P1 may be a program provided as a data signal superimposed on a carrier wave via a network.

5 [0079] According to the distribution container management system 1 pertaining to the present embodiment, the shipment information or the receipt information at each site is acquired by the shipment-and-receipt information acquisition part 12, and the site inventory of the shipping site or the receiving site is updated by the inventory update part 14.

10 Further, the shipment-and-receipt associated with the shipment information or the receipt information acquired is specified by the movement schedule information acquired by the shipment-and-receipt-specific information acquisition part 13 (the shipment-and-receipt-specific information). Then, the adjustment

15 inventory about the specified shipment-and-receipt is calculated and stored by the adjustment inventory calculation part 15. Therefore, according to the distribution container management system 1, since the breakdown of the gap which occurs between the total number of site inventories of the respective sites and the asset inventory can be grasped

20 as the adjustment inventory for each shipment-and-receipt, the site inventories and the asset inventory are easily managed in a matched state.

[0080] It should be noted that, in the present embodiment, the shipment point in time and the receipt point in time are managed on a daily basis

25 in the shipment information, the receipt information, and the movement schedule information. However, they may be managed on a basis

other than the daily basis (for example, a daily and hourly basis, such as what month, what day, and what time). Further, needless to say, examples of data, such as the shipment information, the receipt information, the movement schedule information, the movement content information, and the adjustment inventory, are not limited to these.

Reference Signs List

[0081] 1...distribution container management system, 2...site terminal, 11...inventory storage part, 12...shipment-and-receipt information acquisition part, 13...shipment-and-receipt-specific information acquisition part, 14...inventory update part, 15...adjustment inventory calculation part, P1...distribution container management program, P11...inventory storage module, P12...shipment-and-receipt information acquisition module, P13...shipment-and-receipt-specific information acquisition module, P14...inventory update module, P15...adjustment inventory calculation module.

CLAIMS

1. A distribution container management system for managing distribution containers shipped and received between a plurality of sites, comprising:

5 inventory storage means for storing an asset inventory indicating a total number of the distribution containers serving as management objects, a site inventory indicating a number of the distribution containers which exist for the respective sites, and an adjustment inventory indicating a gap quantity between a shipping quantity and a
10 receiving quantity of the distribution containers for each shipment-and-receipt;

 shipment-and-receipt information acquisition means for acquiring shipment information which associates information indicating a shipping site with information indicating the shipping quantity of the
15 distribution containers or receipt information which associates information indicating a receiving site with information indicating the receiving quantity of the distribution containers;

 shipment-and-receipt-specific information acquisition means for acquiring shipment-and-receipt-specific information which specifies
20 shipment-and-receipt associated with the shipment information or the receipt information acquired by the shipment-and-receipt information acquisition means;

 inventory update means for updating the site inventory of the shipping site or the receiving site based on the shipment information or
25 the receipt information acquired by the shipment-and-receipt information acquisition means; and

adjustment inventory calculation means for calculating the adjustment inventory about the shipment-and-receipt specified by the shipment-and-receipt-specific information acquired by the shipment-and-receipt-specific information acquisition means based on the shipment information or the receipt information acquired by the shipment-and-receipt information acquisition means, and for storing the adjustment inventory in the inventory storage means, wherein

the adjustment inventory calculation means calculates the adjustment inventory by regarding the shipping quantity as “0” if the shipment information has not been acquired at the time of calculating the adjustment inventory and regarding the receiving quantity as “0” if the receipt information has not been acquired at the time of calculating the adjustment inventory,

the shipment-and-receipt-specific information includes section information indicating a section of the shipment-and-receipt,

the section information is any of a movement section indicating that the asset inventory is not changed, an asset input section indicating that the asset inventory is increased by the receiving quantity of the distribution containers associated with the receipt information, and an asset exclusion section indicating that the asset inventory is decreased by the shipping quantity of the distribution containers associated with the shipment information, and

the inventory update means refers to the section information included in the shipment-and-receipt-specific information, and in a case where the section information is the asset input section or the asset exclusion section, the inventory update means increases or decreases the

asset inventory according to the section information.

2. The distribution container management system according to claim 1, wherein

5 the shipment-and-receipt-specific information includes information indicating a scheduled receipt point in time about the shipment-and-receipt, and

10 in a case where the shipment information is acquired and the receipt information is not acquired by the shipment-and-receipt information acquisition means, the adjustment inventory calculation means acquires information indicating a present point in time and compares the present point in time and the scheduled receipt point in time included in the shipment-and-receipt-specific information, and in a case where the present point in time is prior to the scheduled receipt point in time, the adjustment inventory calculation means associates
15 information indicating that the distribution containers are being moved with the adjustment inventory about the shipment-and-receipt specified by the shipment-and-receipt-specific information.

20 3. The distribution container management system according to claim 1 or 2, wherein the adjustment inventory calculation means refers to the section information included in the shipment-and-receipt-specific information, and determines whether to calculate the adjustment inventory based on the section information.

25 4. A distribution container management method executed by a

distribution container management system for managing distribution containers shipped and received between a plurality of sites, the distribution container management system including inventory storage means for storing an asset inventory indicating a total number of the distribution containers serving as management objects, a site inventory indicating a number of the distribution containers which exist for the respective sites, and an adjustment inventory indicating a gap quantity between a shipping quantity and a receiving quantity of the distribution containers for each shipment-and-receipt, comprising:

a shipment-and-receipt information acquisition step of acquiring shipment information which associates information indicating a shipping site with information indicating the shipping quantity of the distribution containers or receipt information which associates information indicating a receiving site with information indicating the receiving quantity of the distribution containers;

a shipment-and-receipt-specific information acquisition step of acquiring shipment-and-receipt-specific information which specifies shipment-and-receipt associated with the shipment information or the receipt information acquired in the shipment-and-receipt information acquisition step;

an inventory update step of updating the site inventory of the shipping site or the receiving site based on the shipment information or the receipt information acquired in the shipment-and-receipt information acquisition step; and

an adjustment inventory calculation step of calculating the adjustment inventory about the shipment-and-receipt specified by the

shipment-and-receipt-specific information acquired in the shipment-and-receipt-specific information acquisition step based on the shipment information or the receipt information acquired in the shipment-and-receipt information acquisition step, and of storing the adjustment inventory in the inventory storage means, wherein

in the adjustment inventory calculation step, the adjustment inventory is calculated by regarding the shipping quantity as “0” if the shipment information has not been acquired at the time of calculating the adjustment inventory and regarding the receiving quantity as “0” if the receipt information has not been acquired at the time of calculating the adjustment inventory,

the shipment-and-receipt-specific information includes section information indicating a section of the shipment-and-receipt,

the section information is any of a movement section indicating that the asset inventory is not changed, an asset input section indicating that the asset inventory is increased by the receiving quantity of the distribution containers associated with the receipt information, and an asset exclusion section indicating that the asset inventory is decreased by the shipping quantity of the distribution containers associated with the shipment information, and

in the inventory update step, the section information included in the shipment-and-receipt-specific information is referred to, and in a case where the section information is the asset input section or the asset exclusion section, the asset inventory is increased or decreased according to the section information.

5. A distribution container management program for causing a computer to function as:

inventory storage means for storing an asset inventory indicating a total number of the distribution containers serving as management objects, a site inventory indicating a number of the distribution containers which exist for the respective sites, and an adjustment inventory indicating a gap quantity between a shipping quantity and a receiving quantity of the distribution containers for each shipment-and-receipt;

shipment-and-receipt information acquisition means for acquiring shipment information which associates information indicating a shipping site with information indicating the shipping quantity of the distribution containers or receipt information which associates information indicating a receiving site with information indicating the receiving quantity of the distribution containers;

shipment-and-receipt-specific information acquisition means for acquiring shipment-and-receipt-specific information which specifies shipment-and-receipt associated with the shipment information or the receipt information acquired by the shipment-and-receipt information acquisition means;

inventory update means for updating the site inventory of the shipping site or the receiving site based on the shipment information or the receipt information acquired by the shipment-and-receipt information acquisition means; and

adjustment inventory calculation means for calculating the adjustment inventory about the shipment-and-receipt specified by the

shipment-and-receipt-specific information acquired by the
shipment-and-receipt-specific information acquisition means based on
the shipment information or the receipt information acquired by the
shipment-and-receipt information acquisition means, and for storing the
adjustment inventory in the inventory storage means, wherein

the adjustment inventory calculation means calculates the
adjustment inventory by regarding the shipping quantity as “0” if the
shipment information has not been acquired at the time of calculating
the adjustment inventory and regarding the receiving quantity as “0” if
the receipt information has not been acquired at the time of calculating
the adjustment inventory,

the shipment-and-receipt-specific information includes section
information indicating a section of the shipment-and-receipt,

the section information is any of a movement section indicating
that the asset inventory is not changed, an asset input section indicating
that the asset inventory is increased by the receiving quantity of the
distribution containers associated with the receipt information, and an
asset exclusion section indicating that the asset inventory is decreased
by the shipping quantity of the distribution containers associated with
the shipment information, and

the inventory update means refers to the section information
included in the shipment-and-receipt-specific information, and in a case
where the section information is the asset input section or the asset
exclusion section, the inventory update means increases or decreases the
asset inventory according to the section information.