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(54) METHOD FOR UPDATING ASSOCIATION DATA BETWEEN ARTICLES AND LOCATIONS.

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**Method for updating association data between articles
and locations**

GENERAL TECHNICAL FIELD AND CONTEXT OF THE INVENTION

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The present invention relates to the association between products of a sales area and locations of said sales area.

10 The display of information related to products offered for sale in a sales area is generally done by means of labels displaying, in particular, the price of the product to which a label is associated, as well as other information such as price by weight, etc.

15 The need to have up-to-date information display has justified the implementation in many sales areas of electronic shelf labels, more conveniently designated by their abbreviation ESL, equipped with a screen on which information display is remotely controlled.

20 The utility of such systems is essentially to allow, at the shelving level of a sales area such as a supermarket, hypermarket, or any other sales area, to present to the consumer, for each product offered for sale, a price reliably corresponding to the price as it appears in the central file of the site, that is, the price as it will actually be used at the checkout for the payment of the product.

25 Another advantage of these known systems is to allow automated price changes in much shorter time frames than with manual display, whether for specific promotional periods on the site, for all or part of the products offered for sale, to reflect tariff changes, to deal with inflation situations where prices must be increased very frequently, etc.

30 The communication capabilities of the ESLs have recently been expanded by equipping them with a short-range radiofrequency device, such as NFC (abbreviation for Near Field Communication) or RFID (abbreviation for Radio Frequency Identification), to take advantage of the sales area customers' equipment in smart communication terminals. A common example of such a mobile terminal is a smartphone, which offers both connection and appropriate information processing capabilities.

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In fact, the interaction between the ESL and the customer's terminal allows new services to be offered to the latter, such as the display of additional product information associated with the ESL. Patent application WO2013/153290 describes a particularly advantageous exploitation of these communication capabilities, allowing the transmission of spatially localized information associated with the location of said mobile terminal to the customer's mobile terminal. The mobile terminal is located through the identification and location of at least one shelf label with which the mobile terminal communicates. Such localization allows for very high precision, on the order of a few centimeters, while indoor triangulation-based geolocation methods using radio signal-emitting beacons can at best achieve precision on the order of a meter, which prevents it being known which product the customer is standing in front of, and thus severely limits the possibilities of location-based interactions.

However, the localization of the mobile terminal from the ESLs assumes precise and correct knowledge of the location of said ESLs. The layout of a sales area is normally described by a planogram. A planogram is a set of association data between products of a sales area and locations of said sales area. The planogram establishes which products should be at what height, on which shelves, and over how many linear meters.

However, the currently used planograms are theoretical visions of what the sales area should be. Indeed, they are typically defined generically, for a plurality of stores of similar size, for which the same layout and the same stocking are planned. In fact, the layout of a given sales area is carried out based on the theoretical planogram corresponding to the size of the sales area. In reality, the actual organization of the sales area significantly deviates from this theoretical planogram. Indeed, it is common for about 10 to 15% of the products present in the sales area not to be found on the planogram, for example, because these products are specific to the sales area, and have not been integrated into the planogram designed for a set of sales areas. In addition, the arrangement of products in the sales area can vary over time, due to product shifts and adjustments made by the operators of the sales area, for example, for seasonal products such as those offered only at Christmas or back-to-school season.

As a result, the planogram is never consistent with reality, and the

location using this planogram suffers from the inability of the planogram to reflect reality. But the inaccuracy of the planogram presents other disadvantages, particularly at the level of stock management and other commercial aspects, since the planogram is, for example, used to estimate the quantities of products on the shelves, based on the theoretical extent of their presence, which, when erroneous, can lead to unanticipated stockouts.

PRESENTATION OF THE INVENTION

A general aim of the invention is to address all or part of the shortcomings of the linking devices of the prior art by proposing a method for keeping the planogram up-to-date and in alignment with the actual layout of products in the sales area.

To this end, a method is proposed for updating association data between products of a sales area and locations of said sales area, said sales area having a plurality of shelf labels distributed within said sales area, each of said shelf labels being associated with a product and being positioned near a location associated with said product, each of said shelf labels being equipped with its own label identifier, said method comprising the steps of, to add at least one shelf label:

- a reading device acquires a sequence of label identifiers including at least two label identifiers where the electronic shelf labels are adjacent in a direction of scrolling of locations in the sales area, one of said adjacent electronic shelf labels being said added electronic shelf label, and another of said adjacent electronic shelf labels being an electronic shelf label whose location is known,
- the reading device transmits the sequence of identifiers to a computer system,
- the computer system updates the association data from the sequence of label identifiers, by determining
 - the products associated with the labels in the label sequence,
 - the respective locations of said products from the order of labels in the label sequence.

This method is advantageously supplemented by the following features, taken alone or in any technically possible combination:

- the acquisition of the sequence of label identifiers includes an operator of the reading device inputting a relative positioning indication with respect to the location of the added label of the adjacent label whose location is known to the computer system, said relative positioning indication being transmitted by the reading device to the computer system;
- the direction of scrolling of the locations in the sales area is known, and a relative positioning indication, with respect to the location of the located label, of the adjacent label whose location is known to the computer system, is deduced from the order of acquisition of the label identifiers in the sequence of label identifiers;
- the reading device transmits to the computer system data relating to the association between the identifier of the added electronic label and the reference of a product associated with said added electronic label;
- several electronic shelf labels are added, said added electronic shelf labels being adjacent to each other in a direction of scrolling of the locations in the sales area, and the acquisition of the sequence of label identifiers by the reading device includes acquiring the identifiers of said added electronic shelf labels in the order of their arrangement relative to the electronic shelf label whose location is known;
- each electronic shelf label in said sequence is equipped with a radiofrequency device, and the reading device acquires the identifier of said electronic shelf labels by establishing a radiofrequency communication with said electronic shelf labels;
- the reading device includes a movement measuring component, and the method includes determining the movement of the reading device between the acquisition of the identifier of the electronic shelf label whose location is known and the acquisition of the identifier of the electronic shelf label to be located;
- a distance between the electronic shelf label whose location is known and the electronic shelf label to be located is determined based on the movement of the reading device between the acquisition of the identifier of the electronic shelf label whose location is known and the acquisition of the identifier of the electronic shelf label to be located, and the computer processing system uses said distance to update the planogram;
- the method includes the steps of:

- the reading device acquires an identifier of an electronic shelf label,
- a dimensional characteristic of the location associated with the electronic shelf label is inputted into the reading device,
- 5 • said dimensional characteristic of the location is transmitted along with the label identifier to the computer processing system.

10 The invention also relates to a computer program product comprising program code instructions for executing the method according to the invention, when said program is executed on a computer.

15 The invention also relates to a data management system for association data between products of a sales area and locations of said sales area, comprising:

- a plurality of electronic shelf labels, each of said shelf labels being associated with its own label identifier,
- a reading device adapted to acquire the identifiers of said plurality of electronic shelf labels and the references of the products associated with said electronic shelf labels,
- 20 - a computer system storing association data between products of a sales area and locations of said sales area, configured to receive from the reading device the identifiers acquired by said reading device, said management system being adapted to implement the method according to the invention.

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PRESENTATION OF THE FIGURES

30 Other features, objectives, and advantages of the invention will emerge from the following description, which is purely illustrative and not limiting, and which should be read in conjunction with the appended drawings among which:

- FIG. 1 illustrates a diagram showing a system according to a possible embodiment of the invention,
- FIGS. 2, 3, and 4 are examples of menus displayed by the reading device in the context of implementing the invention according to a possible
- 35 embodiment,

- FIG. 5 is a diagram illustrating different steps of the method according to a possible embodiment of the invention.

DETAILED DESCRIPTION

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FIG. 1 illustratively and non-limitatively depicts a data communication system corresponding to a possible embodiment of the invention, comprising a reading device 3, a central server 2, and a sequence 1 of electronic shelf labels (ESLs).

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The reading device 3 is capable of communicating with a central server 2. This reading device 3 preferably has information display means, such as a screen, for a user of said reading device 1, and input means like a keyboard, buttons, and/or a touchscreen. The communication between the reading device 3 and the central server 2 can be established through any communication network that is at least partially wireless, notably via a wireless network of the DECT, WIFI, or 3G type. Thus, communication can be established through the internet network to which the central server 2 is connected.

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The ESLs are distributed throughout the sales area. The ESLs present a high spatial density, typically about ten labels per square meter on average, with, however, significant variability. Each ESL is identified by a unique label identifier that is specific to it. This label identifier thus allows for the unequivocal identification of a single and unique ESL in the sales area. Each of these shelf labels is associated with a product and is positioned near a location associated with said product.

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FIG. 1 illustrates a sequence 1 of ESLs 10, 11, 12 set up along a rail 13 for displaying products. Such an ESL has a display screen 14 for displaying information related to a product to which it is associated. Typically, this information includes the product's price, and other information usually available in a sales area, for example, the price per kilogram for a food product. The ESL also includes a plastic housing in which the functional constituents of the ESL are housed.

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Notably, the electronic label includes a radiofrequency communication module to receive data representing information related to a product from a central station connected to the computer system 2, memory to store said data,

and a microcontroller to control the display of information related to the product. These different functional constituents are arranged on a printed circuit board housed in the casing. The ESL also includes a radiofrequency device with which the reading device 3 can establish communication to acquire the label identifier of said ESL. In fact, the reading device 3 is adapted to establish wireless communication with the ESL.

The radiofrequency device of the electronic label includes an antenna and an NFC (abbreviation for Near Field Communication) or RFID (abbreviation for Radio Frequency Identification) type electronic chip. An NFC type radiofrequency device, for example, operates at a frequency of 13.56 MHz like an RFID HF type radiofrequency device.

The central server 2 includes computer processing means comprising at least one processor and a memory in which are stored association data related to the association between products of a sales area and locations of said sales area, said association data constituting the planogram.

The memory of the central server 2 also stores data related to the association between the label identifier and a location in the sales area corresponding to the location of the ESL identified by said identifier, as well as the product associated with the ESL. Thus, thanks to the label identifier, one can find the location of the ESL identified by said identifier and the product to which it relates.

The method makes it possible to update the association data between products of a sales area and locations of said sales area. In case of a change in the association of a product with the ESL at a location, for example when one product is substituted for another at the same location, it is sufficient for the operator making the product change to successively acquire the identifier of the ESL corresponding to this location, and the reference of the product corresponding to said location, and to send to the computer system data related to the association between the ESL identifier and the product reference. The data sent to the computer system are used to update the association data between the products of the sales area and the locations of said sales area, that is, the planogram, since the location of the ESL can be found using the label identifier of it.

The issue of updating the planogram arises particularly when the arrangement of ESLs is changed due to the movement of an ESL, and more precisely when a sequence of ESLs must be modified by adding at least one label, as the removal of a label only requires the deletion of the associated data. It is then necessary to know the location of the moved ESL, whose location is unknown. This is an ESL that needs to be located relative to other ESLs in the sales area to update the planogram.

The method thus proposes updating association data between products of a sales area and locations of said sales area upon the movement of at least one ESL, through the acquisition, by reading device 3, of at least two label identifiers where the ESLs are adjacent, in a direction of scrolling of locations in the sales area, and where one of the identifiers corresponds to the ESL to be located, and the other to an ESL whose location is known.

For illustrative purposes, the present invention is described in detail in the context of adding an ESL. This configuration is illustrated in FIG. 1. Choosing a direction of reading the electronic labels from left to right in FIG. 1, the added label 10 is the central label, flanked by the previous label 11 and the next label 12. It is noted that the physical placement of the ESL 10 in its location can be performed before or after the process that will be described.

FIG. 2 illustrates a non-limiting example of a menu 20 that can be presented by reading device 3. Several options are offered to the operator. A first functionality 21 called "From an associated label" consists of locating an ESL to be located using an associated ESL whose location is known. A second functionality 22 called "Simple association" consists of associating an ESL whose location is known with a product by acquiring a product identifier. A third functionality 23 called "Geolocated associations" involves associating an ESL with a location by manually inputting the location. A fourth functionality 24 called "Survey mode" consists of sequentially locating several ESLs to be located. Finally, a fifth functionality 25 called "Dissociation" consists of dissociating an ESL from a product.

The following focuses particularly on the first functionality 21 and the fourth functionality 24. In the context of the first functionality 21, once the operator has chosen it, another menu 30 such as the one in FIG. 3 is presented. To determine the location of the added ESL 10, acquiring the sequence of label

identifiers involves the operator of reading device 3 inputting a relative positioning indication of an adjacent label 11 or 12, whose location is already known, in relation to the added label 10.

5 The operator uses reading device 3 to acquire (step S1) a label identifier of an adjacent ESL 11 or 12 to the location of the added ESL 10, a location that may either already be occupied by the added ESL 10 or intended to receive the added ESL 10. Thus, the ESL whose label identifier is acquired is the previous ESL 11 or the next ESL 12. As mentioned earlier, this acquisition is preferably done through NFC type wireless communication. This adjacent ESL becomes the
10 reference label, whose identifier appears in frame 32 of menu 30.

The operator also indicates a relative positioning indication of the adjacent label in relation to the added label 10 (step S3). In the example of FIG. 3, it is the scrolling direction, by choosing in menu 30 a scanning direction 31: from left to right or from right to left. The operator thus indicates whether the ESL
15 whose identifier has just been acquired is the previous ESL 11 or the next ESL 12 by selecting the appropriate field, then validates their indication.

The reading device 3 may also offer the operator a menu giving the choice, between designating the ESL whose identifier has just been acquired as
20 either the previous ESL or the next ESL in order to input the relative positioning indication of the adjacent label in relation to the added label 10.

It is possible to input the relative positioning indication of the adjacent ESL whose location is known in relation to the location of the added ESL 10 before or after acquiring the label identifier of said adjacent ESL whose location
25 is known.

The operator uses reading device 3 to acquire the label identifier of the added ESL 10, preferably through NFC type wireless communication, then possibly inputs the reference of the product intended to be associated with said
30 associated label if it is not yet associated with said product. This step can also be performed before or after acquiring the label identifier of said adjacent ESL whose location is known and/or inputting the relative positioning indication of the adjacent ESL whose location is known in relation to the location of the added ESL 10.

35 Several methods are available for inputting the product reference. The most common involves scanning the product's barcode, which generally encodes

the product reference. To this end, the reading device 3 is equipped with a barcode scanner. Alternatively, the operator may manually enter the reference using the reading device's input means, including a real or virtual keyboard. If the product is equipped with a radiofrequency device such as an RFID chip, the reading device 3 can acquire the product reference by establishing communication with said radiofrequency device.

The reading device 3 transmits (step S2) to the computer system 2 the sequence of label identifiers including the identifier of the adjacent label 11, 12 and the label identifier of the added ESL 10. The reading device 3 also transmits the relative positioning indication of said adjacent ESL 11 or 12 relative to the added ESL 10. The data related to the association between the identifier of the added ESL 10 and the reference of a product associated with said added ESL 10 can also be transmitted.

Although the description above, for simplicity's sake, only deals with locating one ESL at a time, it is possible to locate several adjacent ESLs in the direction of scrolling of the sales area's locations. This refers to the fourth functionality called "Survey mode" from the menu 20 in FIG. 2. In this case, the acquisition of the sequence of label identifiers by the reading device includes acquiring the label identifiers of said added electronic shelf labels in the order of their arrangement in the scrolling direction.

Specifically, the operator uses the reading device 3 to acquire a label identifier of an adjacent ESL to the location of the added ESL, a location that may either already be occupied by the added ESL 10 or intended to receive the added ESL 10. Thus, the ESL whose label identifier is acquired is the previous ESL 11 or the next ESL 12.

A relative positioning indication of the adjacent ESL relative to the added ESL 10 is then determined. In this regard, the operator can input the relative positioning indication in relation to the added ESL 10 of the adjacent ESL 11 or 12 whose location is known to the computer system, said relative positioning indication being transmitted by the reading device to the computer system. This known location ESL 11 or 12 thus serves as a reference for the locations of the added ESLs 10. The relative positioning indication can also be deduced because the scrolling direction of the reading device 3 in front of the ESLs is predefined. The chronological order of the acquired references thus determines the relative

positions of the ESLs to which these references belong.

The operator then acquires the identifiers of the added ESLs 10 in order, in terms of proximity, of the arrangement of the locations of the added ESLs relative to the ESL 11 or 12 whose location is known to the computer system. Thus, if two ESLs are added between ESLs 11 or 12, whose location is known, the operator acquires the identifier, for example, of the previous ESL 11, then indicates the direction of movement, or that it is the ESL preceding the locations of the added ESLs 10. The operator then acquires the label identifier of the ESL closest to ESL 11, and then the one furthest from ESL 11.

It is noted that the relative positioning information transmitted to the computer system 2 can include a relative distance between the ESL whose location is known and the ESL to be located 10. This distance can be acquired by measuring the movement of the reading device 3 between the moment it acquires the identifier of the ESL whose location is known and the moment it acquires the identifier of the ESL to be located. For this purpose, the reading device 3 includes a movement measuring component, and the method involves determining the movement of the reading device 3 between the acquisition of the identifier of the electronic shelf label whose location is known and the acquisition of the identifier of the electronic shelf label to be located.

For example, the reading device 3 may be equipped with an accelerometer, allowing the movement of said reading device 3 between the two acquisitions to be determined by integration, and thus deducing the distance. Knowing this distance allows the relative positioning of the ESL to be located accurately relative to the ESL whose location is known. It is also possible to consider as the ESL whose location is known a dummy ESL, that is, not associated with a product, serving as a reference marker to locate other ESLs. This could be the case, for example, for an ESL placed at one end of a shelf to mark it.

The information acquired by the reading device 3, namely the label identifiers, the relative positioning information, and possibly the association data between the products of the sales area and the ESLs, are transmitted to the computer system 2, preferably using a wireless connection.

The computer system 2 thus receives this information and uses it to update (step S3) the association data between the products of the sales area and the locations of said sales area, that is, the planogram. Using the sequence of

label identifiers, the computer system determines the location of the added ESL 10. From the product reference transmitted by the reading device 3 along with the label identifier of the added ESL 10, the computer system 2 also determines the product associated with the added ESL 10. As there is a correspondence
5 between the location of the product associated with the added ESL 10 and the location of said added ESL 10, the computer system simultaneously determines the location of the product associated with the added ESL 10. The planogram is then modified so that said product corresponds to this location.

10 The planogram preferably features a listing of the sales area's locations in the form of a cadaster, with the locations being pinpointed using a reference system or a set of coordinates representative of the sales area's spatial organization. For example, a first coordinate might designate the aisle of the sales area, while a second could specify a section of the shelving unit, a third the
15 shelf level, and a fourth the order of the location on that level. A shelving unit section can be defined as the extent of the shelving on which the levels are continuous. Thus, a break in the levels signifies a transition to another section.

Thus, each location is associated with an ESL and a product. Any modification in the arrangement of the ESL locations resulting in the addition or removal of ESLs is immediately relayed to computer system 2 and incorporated
20 into the planogram. Similarly, in case of a change in the association of a product with the ESL at a location, for example when one product is substituted for another at the same location, it is then sufficient for the operator making the product change to successively acquire the identifier of the ESL corresponding to
25 this location, and the reference of the product corresponding to said location, and to send to the computer system data related to the association between the ESL identifier and the product reference, as explained when adding an ESL. However, it is then not necessary to acquire the identifier of an adjacent ESL if the arrangement of the ESLs has not been modified.

30 The data sent to the computer system are used to update the association data between the products of the sales area and the locations of said sales area, that is, the planogram, since the location of the ESL can be found using the label identifier of it.

35 Moreover, it may be planned to modify a spatial characteristic of a location, particularly the facing, which is the visible shelf length facing the

customer, used on shelving for presenting a product. Indeed, the planogram's locations may have different facings, depending on the characteristics of the products placed there and merchant choices (advertising, in-shelf storage). Thus, the ability to modify the facing, that is, the presentation width of a location, further improves the representativeness and performance of the planogram.

To this end, the method may include the steps of:

- the reading device 3 acquiring a label identifier of an electronic shelf label,
- a dimensional characteristic of the location associated with the electronic shelf label being input into the reading device 3,
- said dimensional characteristic of the location is transmitted along with the label identifier to the computer processing system.

For example, the reading device 3 may offer a menu 40 as illustrated in FIG. 4. A first field 41 corresponds to the label number, that is, the label identifier, which is entered by the operator or by the reading device 3 following the acquisition of the label identifier of an ESL. A second field 42 corresponds to the dimensional characteristic of the location associated with the ESL identified in the first field 41, specifically the facing. The operator may modify the value of this characteristic. The "Next label" button 44 is used to validate the characteristics associated with the ESL (label number, facing) and makes it possible to move on to input the characteristics of another ESL.

Other functionalities may be offered by this menu 40. For instance, it is possible to move to the next level 43, that is, to the next shelf of the shelving unit. The button 45 allows for the deletion of the last scanned item; it is a cancellation button. Finally, the "Finish" button 46 is for validation. The planogram is updated with each change in the arrangement of products in the sales area. It is, therefore, representative of the actual arrangement of each sales area, and is no longer a theoretical vision of what the arrangement of this sales area should be.

Furthermore, the data related to the association between the ESL's identifier and the reference of a product associated with said ESL are used by the computer system 2 to transmit to said ESL the display data related to this product, for example, by radio transmission, so that the information about the product is displayed by the ESL. Additionally, the computer system 2 also offers

the possibility of manually modifying the planogram, for example, by assigning products to certain locations, particularly to initialize the planogram. The association between a product and the ESL is then adjusted to take into account the manual modification performed.

5 Exact knowledge of product locations, as reflected by the planogram through the ESL locations, provides several advantages:

- more precise and accurate consumer localization, via the determination of the location of the ESL whose identifier is communicated by the consumer, as envisaged by the application WO2013/153290;
- 10 - the ability to inform about the location of products, to the consumer or a sales area operator;
- better management of the products on sale, both for managing stocks and for organizing commercial policy,
- 15 - improved productivity of operations carried out in the sales area due to a very precise knowledge of product locations, especially for order preparation, for a rolling inventory, or for the arrangement of products left by shoppers out of their location.

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Claims

1. A method for updating association data between products of a sales area and locations of said sales area, said sales area having a plurality of electronic shelf labels (10, 11, 12) distributed within said sales area, each of said electronic shelf labels (10, 11, 12) being associated with a product and being positioned near a location associated with said product, each of said electronic shelf labels (10, 11, 12) being equipped with its own label identifier, said method comprising the steps of, to locate at least one electronic shelf label to be located,
- a reading device (3) acquires (S1) a sequence of label identifiers including at least two label identifiers where the electronic shelf labels (10, 11, 12) are adjacent in a direction of scrolling of the locations in the sales area, one of said adjacent electronic shelf labels being said electronic shelf label to be located, and another of said adjacent electronic shelf labels being an electronic shelf label whose location is known,
 - the reading device (3) transmits (S2) the sequence of identifiers to a computer system (2),
 - the computer system (2) updates (S3) the association data from the sequence of label identifiers, determining
 - the products associated with the labels in the label sequence,
 - the respective locations of said products from the order of labels in the label sequence.
2. The method according to claim 1, wherein the acquisition of the sequence of label identifiers includes an operator of the reading device inputting a relative positioning indication with respect to the location of the label to be located, of the adjacent label whose location is known to the computer system, said relative positioning indication being transmitted by the reading device to the computer system.
3. The method according to claim 1, wherein the direction of scrolling of the locations in the sales area is known, and a relative positioning indication, with respect to the location of the located label, of the adjacent label whose location is known to the computer system, is deduced from the order of acquisition of the label identifiers in the sequence of label identifiers.

4. The method according to any one of the preceding claims, wherein the reading device transmits to the computer system data relating to the association between the identifier of the electronic shelf label to be located and the reference of a product associated with said added electronic label.

5. The method according to any one of the preceding claims, wherein several electronic shelf labels are to be located, said electronic shelf labels to be located being adjacent to each other in a direction of scrolling of the locations in the sales area, and acquiring the sequence of label identifiers by the reading device includes acquiring the label identifiers of said electronic shelf labels to be located in the order of their arrangement relative to the electronic shelf label whose location is known.

6. The method according to any one of the preceding claims, wherein each electronic shelf label in said sequence is equipped with a radiofrequency device and the reading device acquires the identifier of said electronic shelf labels by establishing radiofrequency communication with said electronic shelf labels.

7. The method according to any one of the preceding claims, wherein the reading device 3 includes a movement measuring component, and the method involves determining the movement of the reading device 3 between the acquisition of the identifier of the electronic shelf label whose location is known and the acquisition of the identifier of the electronic shelf label to be located.

8. The method according to the previous claim, wherein a distance between the electronic shelf label whose location is known and the electronic shelf label to be located is determined based on the movement of the reading device 3 between the acquisition of the identifier of the electronic shelf label whose location is known and the acquisition of the identifier of the electronic shelf label to be located, and the computer processing system uses said distance to update a planogram.

9. The method according to one of the previous claims, comprising the steps of:
- the reading device (3) acquires a label identifier of an electronic shelf label,
 - a dimensional characteristic of the location associated with the electronic shelf label is input into the reading device (3),
 - said dimensional characteristic of the location is transmitted along with the label identifier to the computer processing system.
10. A computer program product comprising program code instructions for executing the method according to any one of the preceding claims when said program is run on a computer.
11. A data management system for association data between products of a sales area and locations of said sales area, comprising:
- a plurality of electronic shelf labels, each of said shelf labels being associated with its own label identifier,
 - a reading device adapted to acquire the identifiers of said plurality of electronic shelf labels and the references of the products associated with said electronic shelf labels,
 - a computer system storing association data between products of a sales area and locations of said sales area, configured to receive from the reading device the label identifiers acquired by said reading device,
- said management system being adapted to implement the method according to one of claims 1 to 8, and in which
- the reading device (3) is configured to acquire a sequence of label identifiers including at least two label identifiers where the electronic shelf labels (10, 11, 12) are adjacent in a direction of scrolling of the locations in the sales area, one of said adjacent electronic shelf labels being said electronic shelf label to be located, and another of said adjacent electronic shelf labels being an electronic shelf label whose location is known,
 - the reading device (3) is configured to transmit the sequence of identifiers to the computer system (2),
 - the computer system (2) is configured to update the association data from the sequence of label identifiers, determining

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- the products associated with the labels in the label sequence,
- the respective locations of said products from the order of labels in the label sequence.

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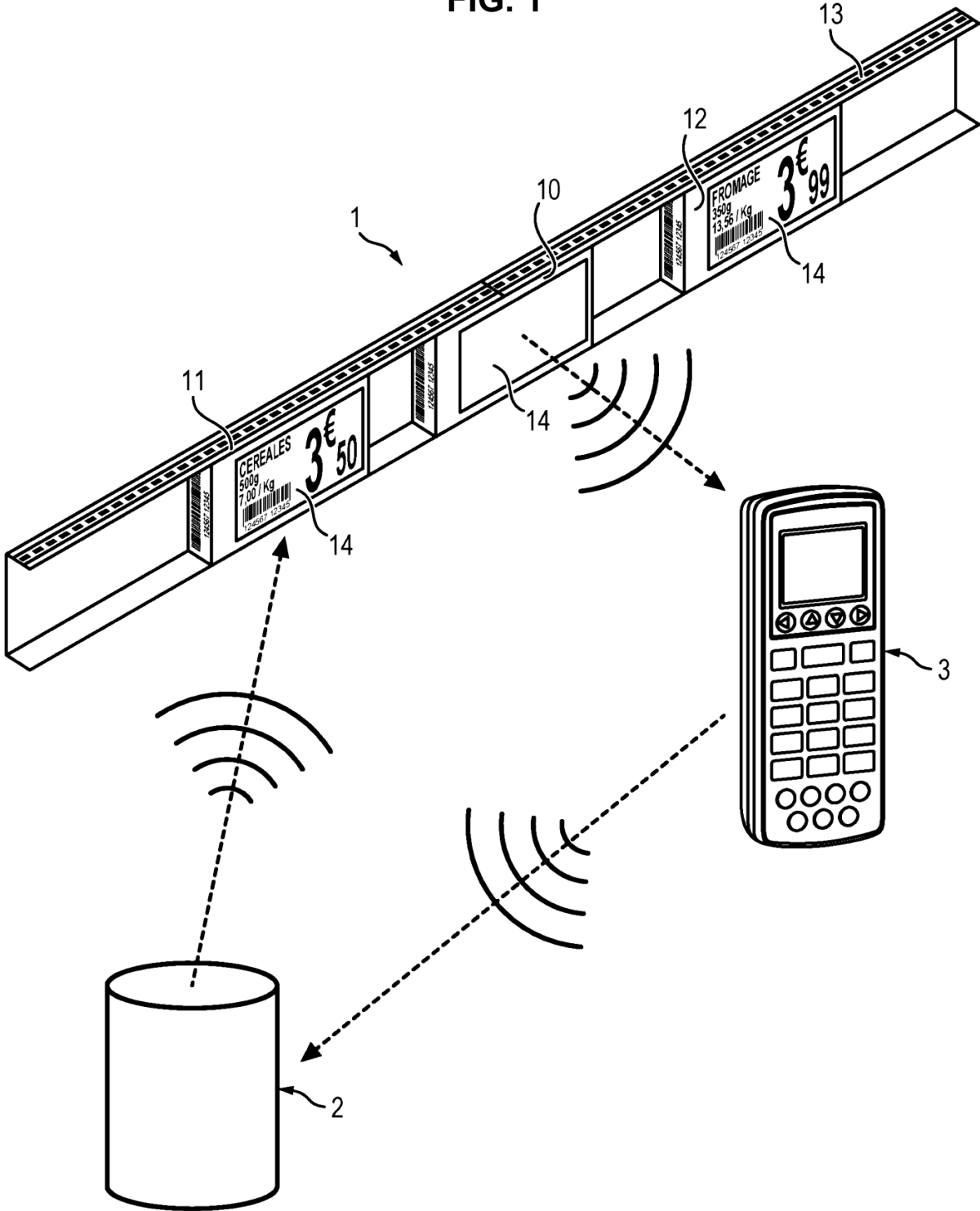
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1/3

FIG. 1



2/3

FIG. 2

20

21

From an associated label
associée

22

Simple associations

23

Geolocated associations

24

Survey mode

25

Dissociation

FIG. 3

30

31

Scanning direction

Left to Right

Left to Right

32

Reference label

Validate

FIG. 4

40

Drugstore - 1 - Level 1

Label number

41

Facing

42

- 2 +

43

Next level →

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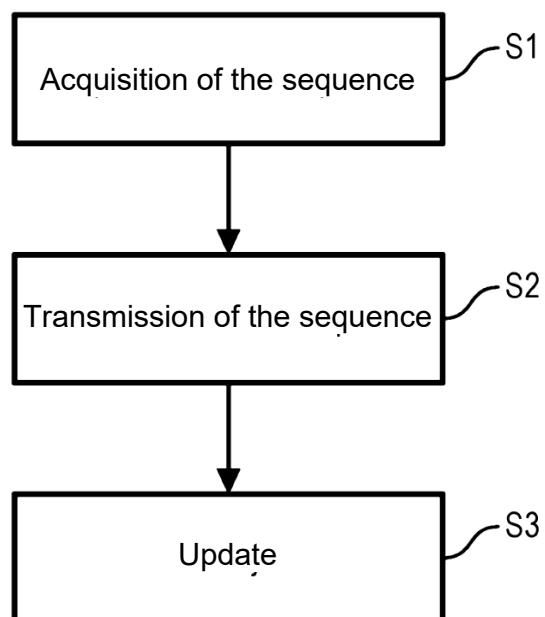
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3/3**FIG. 5**

SEARCH REPORT

Articles L.612-14, L.612-17, and R.612-53 to 69 of the Intellectual Property Code

OBJECT OF THE SEARCH REPORT

The INPI (National Institute of Intellectual Property) annexes a "SEARCH REPORT" to each patent, citing elements of the prior art that may be considered in assessing the patentability of the invention, in terms of Articles L. 611-11 (novelty) and L. 611-14 (inventive step) of the Intellectual Property Code. This report focuses on the patent claims that define the subject-matter of the invention and delineate the scope of protection.

After issuance, the INPI may, at the request of any interested party, provide a "DOCUMENTARY OPINION" based on the documents cited in this search report and any other document the applicant wishes to be considered.

CONDITIONS FOR PREPARATION OF THIS SEARCH REPORT

- ☒ The applicant has submitted observations in response to the preliminary search report.
- ☐ The applicant has maintained the claims.
- ☒ The applicant has amended the claims.
- ☐ The applicant has modified the description to eliminate elements that were no longer in accordance with the new claims.
- ☐ Third parties have submitted observations after publication of the preliminary search report.
- ☐ A supplementary preliminary search report has been established.

DOCUMENTS CITED IN THIS SEARCH REPORT

The distribution of documents between sections 1, 2 and 3 takes into account, where applicable, the latest claims filed and/or observations presented.

- ☐ The documents listed in section 1 below may be considered to assess the patentability of the invention.
- ☒ The documents listed in section 2 below illustrate the general technological background.
- ☐ The documents listed in section 3 below were cited during the procedure, but their relevance depends on the validity of the claimed priorities.
- ☐ No document was cited during the procedure.

**1. ELEMENTS OF THE PRIOR ART THAT MAY BE
CONSIDERED TO ASSESS THE PATENTABILITY OF THE INVENTION**

NONE

**2. ELEMENTS OF THE PRIOR ART ILLUSTRATING THE GENERAL
TECHNOLOGICAL BACKGROUND**

US 2015/178767 A1 (WU CHUN-HSIEN [TW] ET AL)
June 25, 2015 (2015-06-25)

**3. ELEMENTS OF THE PRIOR ART WHOSE RELEVANCE DEPENDS ON THE
VALIDITY OF THE PRIORITIES**

NONE

Date: March 15, 2024

Translator's Declaration

I, Hugh Robinson, hereby declare:

That I possess advanced knowledge of the French and English languages. The attached French into English translation has been translated by me and to the best of my knowledge and belief, it is a true and accurate translation of "Ex. 2004 FR3039681B1 to Bottine".

I declare that all statements made herein of my knowledge are true, and that all statements made on information and belief are believed to be true. I further declare that these statements were made with the knowledge that willfully false statements and the like are punishable by fine or imprisonment or both, under Section 1001 of Title 18 of the United States Code.

H. Robinson

[Hugh Robinson]