

Legal Advantage LLC
Washington DC
10411 Motor City Drive
Suite 750, Bethesda, MD 20817
Phone: 301-450-2161

CERTIFICATION OF TRANSLATION

Original text full file name: EP3329447B1

Translation full file name: EP3329447B1_English-Final

This certifies that the attached document in English with the above title is a true and accurate translation and has the same meaning as the text of the original document of in French to the best of my knowledge and belief.

I am a French to English translator, I performed this translation, and I am competent to perform this translation.

I declare under the penalty of perjury under the laws of the United States that the foregoing is true and correct, and further declare that I am aware that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 1001 of Title 18 of the United States Code.

Executed this 18th day of December 2024.



Hal Pieroway
Translation Department

Legal Advantage LLC uses all available measures to ensure the accuracy of each translation but shall not be held liable for damages due to error or negligence in translation or transcription.

(19)



(11)

EP 3 329 447 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Publication date and mention of patent grant:
02/17/2021 Bulletin 2021/07

(51) Int Cl.:
G06Q 10/08 (2012.01) G06F 16/23 (2019.01)

(21) Filing No.: **16750988.4**

(86) International filing number:
PCT/FR2016/051930

(22) Filing date: **07/25/2016**

(87) International publication number:
WO 2017/017366 (02/02/2017 Gazette 2017/05)

(54) PROCÉDÉ DE MISE À JOUR DE DONNÉES D'ASSOCIATION ENTRE DES ARTICLES ET DES EMPLACEMENTS

VERFAHREN ZUR AKTUALISIERUNG VON ZUORDNUNGSDATEN ZWISCHEN ARTIKELN UND STANDORTEN

METHOD FOR UPDATING ASSOCIATION DATA BETWEEN ARTICLES AND LOCATIONS

(84) Designated contracting states:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated extension states:
BA ME
Designated validation states:
MA MD

(30) Priority: **07/27/2015 FR 1557153**

(43) Date of publication of the application:
06/06/2018 Bulletin 2018/23

(73) Patent holder: **SES-imagotag**
92000 Nanterre (FR)

(72) Inventors:
• **BOTTINE, Philippe**
92100 Boulogne-Billancourt (FR)
• **ROBIN, François**
75116 Paris (FR)

(74) Agent : **Regimbeau**
20, rue de Chazelles
75847 Paris Cedex 17 (FR)

(56) Documents cited:
US-A1-2013 173,435 US-A1-2015 088,701
US-A1-2015 178,767

It is recalled that: Within nine months from the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may file an opposition to that patent with the European Patent Office, in accordance with the Implementing Regulations. The opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Specification

[0001] The present invention relates to the association between the articles of a retail area and the locations of said retail area.

5 [0002] The display of information relating to articles presented for sale in a retail area is generally done by means of labels displaying, in particular, the price of the article to which a label is associated, as well as other information such as the price by weight, etc.

[0003] The need to have an up-to-date information display has justified the installation in many retail areas of electronic shelf labels, more conveniently designated by their acronym ESL, 10 having a screen on which the display of information is controlled remotely.

[0004] The usefulness of such systems is essentially to allow, at the shelves of a retail area such as a supermarket, hypermarket or any other retail area, to present to the consumer, for each article presented for sale, a price corresponding reliably to the price as it appears in the central file of the site, that is to say, to the price that will actually be used at the checkout for 15 the payment of the article.

[0005] Another advantage of these known systems is that they allow automated price changes to be made in much shorter time periods than with a manual display, whether for particular promotional periods on the site, for all or part of the articles presented for sale, to reflect price changes, or to deal with inflation situations where prices must be increased very frequently, 20 etc.

[0006] The communication capabilities of ESLs have recently been amplified by equipping them with a short-range radiofrequency device, of the NFC (Near Field Communication) or RFID (Radio Frequency Identification) type, in order to take advantage of the intelligent mobile communication terminals belonging to customers in retail areas. A common example of such 25 a mobile terminal is a smartphone-type mobile phone, which offers both connection and appropriate information processing possibilities.

[0007] In fact, the interaction between the ESL and the customer's terminal makes it possible to offer the customer new services, such as the display of additional information on the product with which the ESL is associated. Patent application WO2013/153290 discloses a particularly 30 advantageous use of these communication capabilities in that they make it possible to transmit to the customer's mobile terminal spatially localized information associated with the localization of said mobile terminal. The mobile terminal is localized by identifying and localizing at least one shelf label with which the mobile terminal communicates. Such localization makes it possible to obtain very high precision, of the order of a few centimeters,

while geolocalization methods based on indoor triangulation from beacons emitting a radio signal only allow at best a precision of the order of one meter, which makes it impossible to know which product the customer is looking at, and, therefore, greatly restricts the possibilities of interactions based on localization.

5 **[0008]** 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 retail area is normally described by a planogram. A planogram is a set of association data between articles in a retail area and locations in said retail area. The planogram establishes which products must be at a certain height, on which shelves and over how many linear meters.

10 **[0009]** However, the planograms currently used are theoretical visions of what the retail 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 traffic is planned. In fact, the layout of a given retail area is carried out on the basis of the theoretical planogram corresponding to the size of the retail area. In practice, the reality of the organization of the retail area deviates significantly
15 from this theoretical planogram. Indeed, it is common for around 10 to 15% of the items present in a retail area not to be found on the planogram, for example, because these articles are specific to that retail area and have not been integrated into the planogram, which is designed for different retail areas. In addition, the layout of articles in the retail area may vary over time, due to product shifts and adaptations made by retail area operators, for example,
20 for seasonal products such as those offered only at Christmas or at the start of the school year.

[0010] As a result, the planogram never conforms to reality, and the localization using this planogram suffers from the planogram's inability to reflect reality. But the inaccuracy of the planogram has other drawbacks, particularly in terms of inventory management and other
25 commercial aspects, since the planogram is, for example, used to estimate the quantities of articles on the shelves based on the theoretical coverage of their presence, which, if inaccurate, may lead to unanticipated stock shortages.

[0011] The American patent application published under number US 2013/173435 A1 discloses a method for updating association data between articles in a retail area and
30 locations in the departments of the retail area. While using this method, a user scans several products in succession, and the product numbers are transmitted to a server. However, the determined locations are unreliable since the labels read by the mobile terminal are on the product packaging, and are, therefore, likely to be displaced by customers. In addition, the proposed method is impractical in the event of a stock shortage of certain products on the
35 shelves. Finally, this document does not propose a solution for knowing the spacing between

products in the same department of the retail area.

PRESENTATION OF THE INVENTION

5 **[0012]** A general aim of the invention is to overcome all or part of the flaws of the connecting devices of the prior art by proposing a method that makes it possible to keep the planogram up-to-date and in concordance with the actual arrangement of the products in the retail area.

10 **[0013]** For this purpose, a method is proposed for updating a planogram representative of a retail area, in which the planogram comprises association data between the articles of said retail area and the locations of said retail area, said retail area having a plurality of shelf labels distributed in said retail area, each of said shelf labels being associated with an article and being arranged near a location associated with said article, each of said shelf labels being provided with a unique label identifier, a label added to a shelf being considered as a label to be localized. Said method comprises the steps according to which, in order to localize at least
15 the label to be localized, a mobile reading device acquires a sequence of label identifiers comprising the label identifier of the label to be localized and further comprising the label identifier of a label adjacent to the label to be localized in a scrolling direction of the locations of the retail area, the label adjacent being the previous label in the scrolling direction or being the next label in the scrolling direction, the mobile reading device comprising a displacement measuring member, the acquisition of the sequence of identifiers comprising a determination
20 of a displacement of the mobile reading device between the electronic shelf label whose location is known and the electronic shelf label to be localized. Once the location of the adjacent label is known, the mobile reading device transmits the label identifier sequence to a computer system, the computer system updates the planogram from the label identifier sequence by determining: the articles associated with the labels of the sequence of labels, the respective locations of said articles from the order of the labels in the sequence of labels, a location of the label to be localized being determined as a function of the known location of the adjacent label and as a function of a distance between the electronic shelf label whose location is known and the electronic shelf label to be localized, said distance being determined
25 based on the displacement of the mobile reading device.

30 **[0014]** This method is advantageously supplemented by the following features, taken alone or in any of their technically possible combinations:

- the acquisition of the label identifier sequence comprises the information, by an operator of the reading device, of an indication of relative positioning with respect to

the location of the added label of the adjacent label whose location is known to the computer system, said indication of relative positioning being transmitted by the reading device to the computer system;

- the scrolling direction of the locations of the retail area is known, and an indication of relative positioning, with respect to the location of the localized label, of the adjacent label whose location is known to the computer system, is derived from the order of acquisition of the label identifiers of the label identifiers sequence;
- 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 an article with which said added electronic label is associated;
- several electronic shelf labels are added, said added electronic shelf labels being adjacent to each other in a scrolling direction of the locations of the retail area, and the acquisition of the label identifier sequence by the reading device comprises the acquisition of the label 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 of said sequence is provided with a radio frequency device and the reading device acquires the identifier of said electronic shelf labels by establishing a radio frequency communication with said electronic shelf labels;
- the method comprises the steps according to which:
 - the reading device acquires a label identifier of an electronic shelf label,
 - a dimension characteristic of the location associated with the electronic shelf label is entered in the reading device,
 - said dimension characteristic of the location is transmitted with the label identifier to the processing computer system.

[0015] 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.

[0016] The invention also relates to a system for managing a planogram representative of a retail area, the planogram comprising association data between the articles of said retail area and the locations of said retail area, the system comprising:

- a plurality of electronic shelf labels, each of said shelf labels being associated with a unique label identifier,
- a mobile reading device, suitable for acquiring the label identifiers of said plurality of electronic shelf labels and the references of the articles associated with said electronic shelf labels,

– a computer system, configured to store the planogram, and configured to receive, from the reading device, the label identifiers acquired by said reading device, said management system being suitable for implementing the method as defined above, and in which:

- the mobile reading device is configured to acquire a sequence of label identifiers comprising at least two label identifiers whose electronic shelf labels are adjacent in a scrolling direction of the locations of the retail area, one of said adjacent electronic shelf labels being said electronic shelf label to be localized, and another of said adjacent electronic shelf labels being an electronic shelf label whose location is known, the mobile reading device comprising a displacement measuring member, said member being configured to determine a displacement of the mobile reading device between the electronic shelf label whose location is known and the electronic shelf label to be localized,
- the mobile reading device is further configured to transmit the label identifier sequence to the computer system,
- the computer system is configured to update the planogram from the label identifier sequence, by determining:
 - the articles associated with the labels of the sequence of labels,
 - the respective locations of said articles, based on the order of the labels in the sequence of labels and on a distance between the electronic shelf label whose location is known and the electronic shelf label to be localized, said distance being determined from the displacement of the mobile reading device.

PRESENTATION OF THE FIGURES

[0017] Other characteristics, aims and advantages of the invention will emerge from the description which follows, which is purely illustrative and non-limiting, and which must be read in conjunction with the appended drawings in which:

- Fig. 1 shows a diagram illustrating 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 the implementation of the invention according to a possible embodiment,
- Fig. 5 is a diagram illustrating different steps of the method according to a possible embodiment of the invention.

DETAILED DESCRIPTION

[0018] Fig. 1 shows, for illustrative and non-limiting purposes, a data communication system corresponding to a possible embodiment of the invention which comprises a reading device 3, a central server 2 and a sequence 1 of electronic shelf labels (ESLs).

[0019] The reading device 3 is able to communicate with a central server 2. This reading device 3 is preferably provided with information display means, such as a screen, intended for a user of said reading device 1, and input means such as a keyboard, buttons, and/or a touch screen. The communication between the reading device 3 and the central server 2 may be established by means of any, at least partially wireless, communication network, in particular via a wireless network of the DECT, WIFI or 3G type. Thus, communication can be established via the Internet network to which the central server 2 is connected.

[0020] The ESLs are distributed across the retail area. The ESLs have a high spatial density, typically approximately ten labels per square meter on average, with, however, significant variability. Each ESL is identified by a unique label identifier. Therefore, this label identifier makes it possible to unambiguously identify a single and unique ESL in the retail area. Each of said shelf labels is associated with an article and is arranged near a location associated with said article.

[0021] Fig. 1 shows a sequence 1 of ESLs 10, 11, 12 placed along a rail 13 of a shelf for presenting articles. Such an ESL comprises a display screen 14 for displaying information relating to an article with which it is associated. Typically, this information comprises the price of the article and other information usually available in a retail area, for example, the price per kilogram for a food product. The ESL also comprises a plastic housing inside which the functional components of the ESL are housed.

[0022] In particular, the electronic label comprises a radiofrequency communication module for receiving data representative of information relating to an article from a central station connected to the computer system 2, a memory for storing said data, and a microcontroller for controlling the display of the information relating to the article. These different functional components are arranged on a printed circuit board lodged in the housing. The ESL also comprises a radiofrequency device with which the reading device 3 can establish communication in order to acquire the label identifier of said ESL. In fact, the reading device 3 is suitable for establishing wireless communications with the ESL.

[0023] The radiofrequency device of the electronic label comprises an antenna and an electronic chip of the NFC (Near Field Communication) or RFID (Radio Frequency Identification) type. An NFC type radiofrequency device operates, for example, with a

frequency of 13.56 MHz like an HF RFID type radiofrequency device.

[0024] The central server 2 comprises computer processing means that include at least one processor and a memory in which association data relating to the association between the articles in a retail area and the locations in said retail area are stored, said association data making up the planogram.

[0025] The memory of the central server 2 also stores data relating to the association between the label identifier and a location of the retail area which corresponds to the localization of the ESL identified by said identifier, as well as to the article with which the ESL is associated. Thus, thanks to the label identifier, it is possible to find the location of the ESL identified by said identifier and the article to which it relates.

[0026] The method makes it possible to update the association data between the articles of a retail area and the locations of said retail area. In the event of a change in the association of an article with the ESL at a location, for example when an article is substituted for another at the same location, the operator carrying out the article change simply needs to successively acquire the identifier of the ESL corresponding to that location, and the reference of the article corresponding to said location, and to send to the computer system data relating to the association between the ESL identifier and the reference of the article. The data sent to the computer system are used to update the association data between the articles in the retail area and the locations of said retail area, that is to say, the planogram, since the location of the ESL can be found by means of its label identifier.

[0027] The problematic update of the planogram arises, in particular, when the arrangement of the ESLs is modified due to the displacement of an ESL and, more precisely, when an ESL sequence must be modified by the addition of at least one label, since the removal of a label only requires the deletion of the data associated with it. It is then necessary to know the location of the displaced ESL, whose location is unknown. Therefore, that ESL has to be localized in relation to the other ESLs in the retail area in order to update the planogram.

[0028] Thus, the method proposes updating the association data between the articles of a retail area and the locations of said retail area when at least one ESL is displaced, by means of the acquisition, by the reading device 3, of at least two label identifiers whose EEGs are adjacent, in a scrolling direction of the locations of the retail area, the first identifier corresponding to the EEG to be localized, and the second identifier corresponding to an EEG whose location is known.

[0029] By way of illustration, the present invention is described in detail in the context of the addition of an ESL. This is the configuration that is illustrated in Fig. 1. By choosing the reading direction of the electronic labels from left to right in Fig. 1, the added label 10 is the central

label, framed on each side by the previous label 11 and the following label 12. It should be noted that the physical placement of the ESL 10 in its location may be performed before or after the method described below.

[0030] Fig. 2 illustrates a non-limiting example of a menu 20 that may be presented by the reading device 3. Several possibilities are offered to the operator. A first functionality 21 called "Based on an associated label" consists in localizing an ESL to be localized by means of an associated ESL whose location is known. A second functionality 22 called "Simple association" consists in associating an ESL whose location is known with an article by acquiring its article identifier. A third functionality 23 called "Geolocalized associations" consists in associating an ESL with a location by manually entering the location. A fourth functionality 24 called "Mapping mode" consists in sequentially localizing several ESLs to be localized. Finally, a fifth functionality 25 called "Dissociation" consists in dissociating an ESL from an article.

[0031] In what follows, the focus is more 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 that of Fig. 3, is presented to them. In order to determine the location of the added ESL 10, the acquisition of the sequence of label identifiers comprises the information, by an operator of the reading device 3, of an indication of relative positioning of an adjacent label 11 or 12, whose location is already known, relative to the added label 10.

[0032] The operator uses the reading device 3 to acquire (step S1) a label identifier of an adjacent ESL 11 or 12 at the location of the added ESL 10, a location which 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 indicated above, this acquisition is preferably done by NFC-type wireless communication. This adjacent ESL becomes the reference label, whose identifier appears in frame 32 of menu 30.

[0033] The operator also provides an indication of relative positioning of the adjacent label with respect to the added label 10 (step S3). In the example of Fig. 3, it is the scrolling direction, by choosing a scan direction 31 in menu 30: from left to right or from right to left. Therefore, the operator indicates whether the ESL, 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.

[0034] The reading device 3 may also offer the operator a menu giving them the choice between designating the ESL, whose identifier has just been acquired, as the previous ESL or the next ESL, in order to enter the indication of relative positioning of the adjacent label with respect to the added label 10.

[0035] It is possible to enter the indication of relative positioning of the adjacent ESL whose location is known with respect to the location of the added ESL 10 before or after the acquisition of the label identifier of said adjacent ESL whose location is known.

[0036] The operator uses the reading device 3 to acquire the label identifier of the added ESL 10, preferably by NFC-type wireless communication, then optionally enters the reference of the article intended to be associated with said associated label, if the latter is not yet associated with said article. This step may also be carried out before or after acquiring the label identifier of said adjacent ESL whose location is known, and/or entering the relative positioning indication of the adjacent ESL whose location is known relative to the location of the added ESL 10.

[0037] It is possible to enter the reference of the article in several different ways. The most common consists of scanning a barcode of the article, which generally encodes the reference of the article. For this purpose, the reading device 3 is provided with a barcode reader. Alternatively, the operator may manually enter the reference using the input means of the reading device, including a keyboard, real or virtual. If the article is provided with a radiofrequency device such as an RFID chip, the reading device 3 can acquire the reference of the article by establishing a communication with said radiofrequency device.

[0038] The reading device 3 transmits (step S2) to the computer system 2 the sequence of label identifiers that comprises the identifier of the adjacent label 11, 12 and the label identifier of the added ESL 10. The reading device 3 also transmits the indication of relative positioning of said adjacent ESL 11 or 12 with respect to the added ESL 10. The data relating to the association between the identifier of the added ESL 10 and the reference of an article with which said added ESL 10 is associated may also be transmitted.

[0039] Although the above description, for the sake of simplicity, only deals with the localization of one ESL at a time, it is possible to localize several ESLs adjacent to each other in a scrolling direction of the locations of the retail area. This is the fourth functionality called "Mapping Mode" of the menu 20 of Fig. 2. In this case, the acquisition of the label identifier sequence by the reading device comprises the acquisition of the label identifiers of said added electronic shelf labels in the order of their arrangement in the scrolling direction.

[0040] More specifically, the operator uses the reading device 3 to acquire a label identifier of an ESL adjacent to the location of the added ESL, which location may either be already 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.

[0041] An indication of relative positioning of the adjacent ESL with respect to the added ESL 10 is then determined. In this regard, the operator may enter the indication of relative

positioning with respect to the added ESL 10 of the adjacent ESL 11 or 12 whose location is known to the computer system, said indication of relative positioning being transmitted by the reading device to the computer system. Therefore, this ESL 11 or 12, whose location is known, serves as a reference for the locations of the added ESLs 10. The indication of relative positioning may also be derived by the fact that the scrolling direction of the reading device 3 in front of the ESLs is predefined. Thus, the chronological order of the acquired references determines the relative positions of the ESLs to which these references belong.

[0042] Subsequently, the operator acquires the identifiers of the added ESLs 10 in the 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, in the event of the addition of two ESLs between the 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 displacement, 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 the ESL 11, then the label identifier of the ESL furthest from the ESL 11.

[0043] It should be noted that the relative positioning information transmitted to the computer system 2 may comprise a relative distance between the ESL whose location is known and the ESL to be localized 10. This distance may be acquired by measuring the displacement of the reading device 3 between the moment when it acquires the identifier of the ESL whose location is known and the moment when it acquires the identifier of the ESL to be localized. For this purpose, the reading device 3 comprises a displacement measuring member, and the method comprises determining the displacement 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 localized.

[0044] For example, the reading device 3 may be equipped with an accelerometer which makes it possible to determine by integration the displacement of said reading device 3 between the two acquisitions, and, therefore, to derive the distance therefrom. The knowledge of this distance makes it possible to accurately report the relative positioning of the ESL to be localized with respect to the ESL whose location is known. It is also possible to consider a fictitious ESL, that is not associated with an article, as an ESL whose location is known, in order to constitute a reference mark for localizing other ESLs. This practice may be used, for example, to locate an ESL placed at one end of a shelf.

[0045] The information acquired by the reading device 3, namely the label identifiers, the relative positioning information, and, optionally, the association data between the articles of the retail area and the ESLs, are transmitted to the computer system 2, preferably by means

of a wireless connection.

[0046] Therefore, the computer system 2 receives this information and uses it to update (step S3) the association data between the articles in the retail area and the locations of said retail area, that is to say, the planogram. By means of the label identifier sequence, the computer system determines the location of the added ESL 10. From the reference of the article transmitted by the reading device 3 at the same time as the label identifier of the added ESL 10, the computer system 2 also determines the article associated with the added ESL 10. Since there is a correspondence between the location of the article associated with the added ESL 10 and the location of said added ESL 10, the computer system determines at the same time the location of the article associated with the added ESL 10. The planogram is then modified so that said article corresponds to this location.

[0047] The planogram preferably presents a referencing of the locations of the retail area in the form of a land register, with a localization of said locations by means of a reference frame or a set of coordinates representative of the spatial organization of the retail area. For example, a first coordinate may designate the department of the retail area, while a second coordinate may designate a section of a gondola, a third coordinate the level of a shelf, and a fourth coordinate the order of the location on this level. A section of the gondola may, in particular, be defined as being the area of the gondola on which the shelves are continuous. Therefore, a break in the shelving means the passage to another section.

[0048] Thus, each location is associated with an ESL and an article. Any modification of the arrangement of the locations of the ESLs that results in the addition or removal of an ESL, is immediately relayed to the computer system 2 and integrated into the planogram. Similarly, in the event of a change in the association of an article with the ESL at a location, for example, when one article is substituted for another at the same location, the operator performing the article change then simply needs to successively acquire the identifier of the ESL corresponding to that location, and the reference of the article corresponding to said location, and to send to the computer system the data relating to the association between the ESL identifier and the reference of the article, as explained when adding an ESL. However, as a result, it is not necessary to acquire the identifier of an adjacent ESL since the arrangement of the ESLs has not been modified.

[0049] The data sent to the computer system are used to update the association data between the articles in the retail area and the locations in said retail area, that is to say, the planogram, since the location of an ESL can be found by means of its label identifier.

[0050] In addition, there may be a need to modify a spatial characteristic of a location, and in particular the front end, better known by the term "facing", which is the visible shelf length,

facing the customer, used on a shelf for the presentation of an article. Indeed, the locations of the planogram may have different facings, depending, in particular, on the characteristics of the articles placed there, and on the commercial choices (advertising, shelf storage). Thus, the possibility of modifying the facing, that is to say, the presentation width of a location, makes it possible to further improve the representativeness and performance of the planogram.

[0051] For this purpose, the method may comprise the steps according to which:

- the reading device 3 acquires a label identifier of an electronic shelf label,
- a dimension characteristic of the location associated with the electronic shelf label is entered in the reading device 3,
- said dimension characteristic of the location is transmitted with the label identifier to the processing computer system.

[0052] For example, the reading device 3 may propose a menu 40, as illustrated in Fig. 4. A first field 41 corresponds to the label number, i.e., 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 dimension characteristic of the location associated with the ESL identified in the first field 41, in this case 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 allows to move on to the information on the characteristics of another ESL.

[0053] Other functionalities may be offered by this menu 40. For example, it is possible to move to a next level 43, that is to say, to a shelf of a next gondola. The button 45, which is a cancellation button, allows to delete the last scanned element. Finally, the button 46 marked "Finish" allows to validate. The planogram is updated with each modification of the arrangement of the articles in the retail area. Therefore, it is representative of the actual arrangement of each retail area, and is no longer a theoretical vision of what the arrangement of this retail area should be.

[0054] Furthermore, the data relating to the association between the identifier of the ESL and the reference of an article with which said ESL is associated are used by the computer system 2 to transmit to said ESL the display data relating to this article, for example by radio transmission, so that the information on the article is displayed by the ESL. In addition, the computer system 2 also offers the possibility of modifying the planogram manually, for example, by assigning articles to certain locations, in particular to initialize the planogram, and the association between an article and the ESL is then adapted to take the manual modification made into account.

[0055] The exact knowledge of the location of the products, which is reflected in the

planogram by means of the locations of the ESLs, provides several advantages:

- localizing the consumer, by means of the determination of the location of the ESL whose identifier is communicated by the consumer, as disclosed in application WO2013/153290, is more precise and accurate;
- the possibility of informing the consumer or an operator of the retail area about the localization of the articles;
- a better management of the articles offered for sale, both in terms of stock management and commercial policy organization,
- a better productivity of the operations carried out in the retail area due to the very precise knowledge of the location of the products, in particular for order preparation, for rotating the inventory, or even for restoring to their location articles abandoned in the store outside their location.

Claims

1. A method for updating a planogram representative of a retail area, wherein the planogram comprises association data between the articles of said retail area and the locations of said retail area, and said retail area has a plurality of shelf labels (10, 11, 12) distributed in said retail area, each of said shelf labels (10, 11, 12) being associated with an article and being arranged near a location associated with said article, wherein each of said shelf labels (10, 11, 12) is provided with a unique label identifier, a label added to a shelf being considered as a label to be localized (10), said method comprising the steps according to which, in order to localize at least the label to be localized:
- a mobile reading device (3) acquires (S1) a sequence of label identifiers comprising the label identifier of the label to be localized (10) and further comprising the label identifier of an adjacent label (11, 12) relative to the label to be localized (10) in a scrolling direction of the locations of the retail area, the adjacent label (11, 12) being the previous label according to the scrolling direction or being the next label according to the scrolling direction, wherein the mobile reading device (3) comprises a displacement measuring member and the acquisition (S1) of the sequence of identifiers comprises a determination of a displacement of the mobile reading device (3) between the electronic shelf label whose location is known and the electronic shelf label to be localized, the location of the adjacent label (11, 12) being known,
 - the mobile reading device (3) transmits (S2) the label identifier sequence to a computer system (2),
 - the computer system (2) updates (S3) the planogram based on the sequence of identifiers of labels, by determining:
 - the articles associated with the labels of the sequence of labels,
 - the respective locations of said articles, based on the order of the labels in the sequence of labels, wherein a location of the label to be localized (10) is determined as a function of the known location of the adjacent label (11, 12) and as a function of a distance between the electronic shelf label whose location is known and the electronic shelf label to be localized, said distance being determined from the movement of the mobile reading device (3).
2. The method according to claim 1, wherein the acquisition of the label identifier sequence

comprises the information, by an operator of the reading device, of an indication of relative positioning, with respect to the location of the label to be localized, of the adjacent label whose location is known to the computer system, wherein said indication of relative positioning is transmitted by the reading device to the computer system.

5

3. The method according to claim 1, wherein the scrolling direction of the locations of the retail area is known, and an indication of relative positioning, with respect to the location of the localized label, of the adjacent label whose location is known to the computer system, is derived from the order of acquisition of the label identifiers of the label identifier sequence.

10

4. The method according to any of the preceding claims, wherein the reading device transmits to the computer system data relating to the association between the identifier of the electronic label to be localized and the reference of an article with which said added electronic label is associated.

15

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

20

6. The method according to any of the preceding claims, wherein each electronic shelf label of said sequence is provided 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.

25

7. The method according to one of the preceding claims, comprising the steps according to which:

30

- the reading device (3) acquires a label identifier of an electronic shelf label,
- a dimension characteristic of the location associated with the electronic shelf label is entered in the reading device (3),
- said dimension characteristic of the location is transmitted with the label identifier to the processing computer system.

35

8. A computer program product comprising program code instructions for executing the method according to any of the preceding claims, when said program is executed on a computer.

5 9. A system for managing a planogram representative of a retail area, wherein the planogram comprises association data between the articles of said retail area and the locations of said retail area, the system comprising:

- a plurality of electronic shelf labels, each of said shelf labels being associated with a unique label identifier,
- 10 – a mobile reading device, suitable for acquiring the label identifiers of said plurality of electronic shelf labels and the references of the articles associated with said electronic shelf labels,
- a computer system, configured to store the planogram, and configured to receive from the reading device the label identifiers acquired by said reading device,

15 wherein said management system is suitable for implementing the method according to one of claims 1 to 7, and wherein

- the mobile reading device (3) is configured to acquire a sequence of label identifiers comprising at least two label identifiers that include the electronic shelf labels (10, 11, 12) that are adjacent in a scrolling direction of the locations of the retail area, one of said adjacent electronic shelf labels being said electronic shelf label to be localized, and another of said adjacent electronic shelf labels being an electronic shelf label whose location is known,
- 20 the mobile reading device (3) comprising a displacement measuring member, said member being configured to determine a displacement of the mobile reading device (3) between the electronic shelf label whose location is known and the electronic shelf label to be localized,
- 25 – the mobile reading device (3) being further configured to transmit the label identifier sequence to the computer system (2),
- the computer system (2) is configured to update the planogram based on the label identifier sequence, by determining
- 30
 - the articles associated with the labels of the sequence of labels,
 - the respective locations of said articles, based on the order of the labels in the sequence of labels, and on a distance between the electronic shelf label whose location is known and the electronic shelf label to be localized, said distance being
- 35 determined from the movement of the mobile reading device (3).

FIG. 1

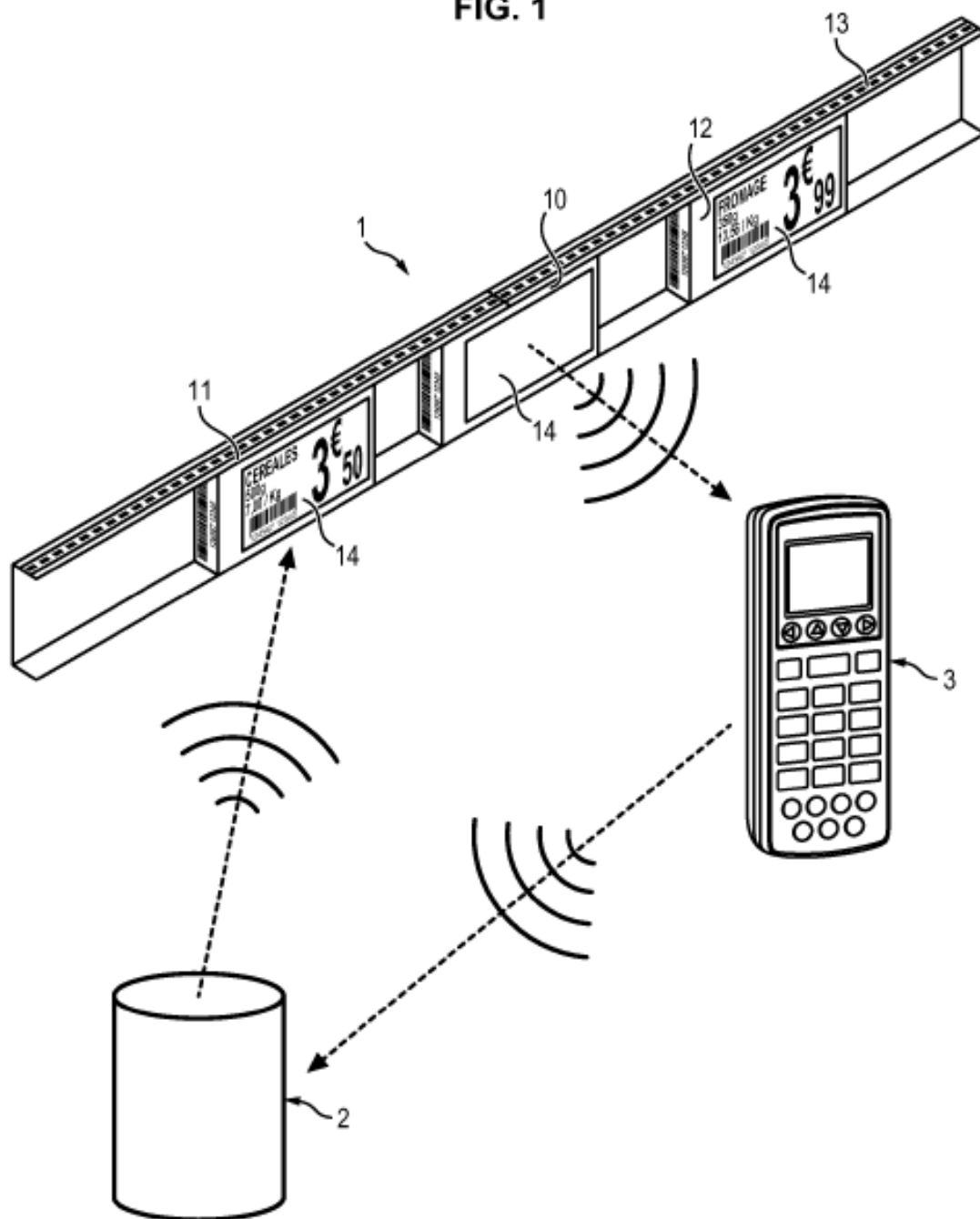


FIG. 2

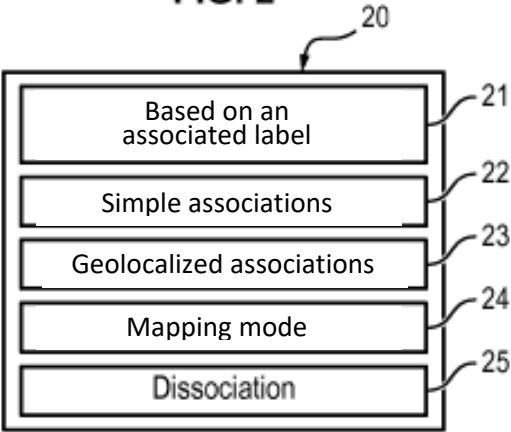


FIG. 3

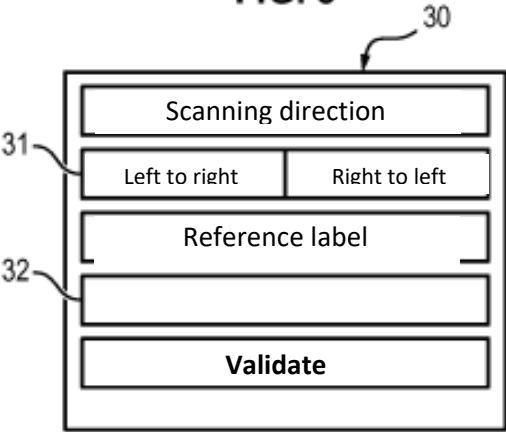


FIG. 4

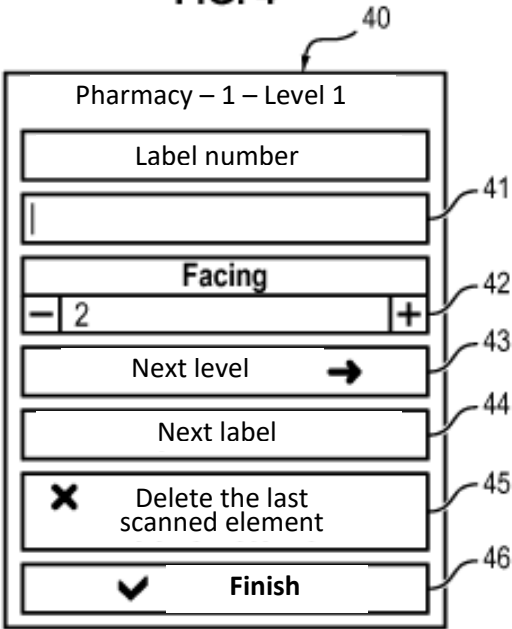
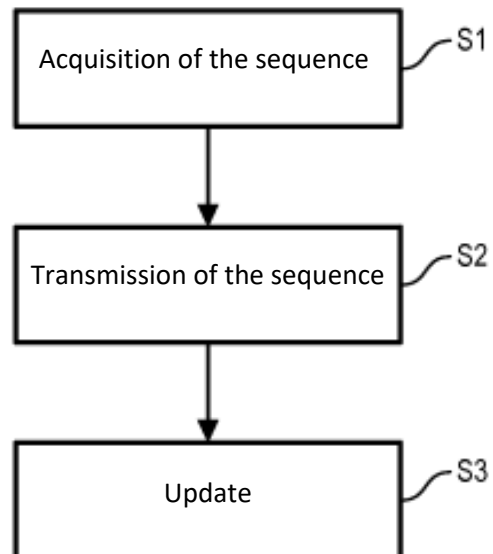


FIG. 5



REFERENCES CITED IN THE SPECIFICATION

This list of references cited by the applicant is intended solely as an aid to the reader and does not form part of the European patent document. Although the greatest care has been taken in its preparation, errors or omissions cannot be excluded and the EPO accepts no liability in this respect.

Patent documents cited in the specification

- WO 2013153290 A [0007] [0055]
- US 2013173435 A1 [0011]