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(54) **METHOD AND SYSTEM FOR INPUTTING PRODUCTS INTO AN INVENTORY SYSTEM**

(71) Applicant: **Vocollect, Inc.**, Pittsburgh, PA (US)

(72) Inventors: **Jeffrey Pike**, Murrysville, PA (US);
Lori Pike, Murrysville, PA (US); **Mark
Mellott**, Pittsburgh, PA (US); **Vanessa
Cassandra Sanchez**, Pittsburgh, PA
(US); **George Joshue Karabin**,
Pittsburgh, PA (US); **Brian Bender**,
Jeannette, PA (US); **Justin Volz**,
Verona, PA (US)

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(57) **ABSTRACT**

A method of characterizing inventory items to a planogram includes receiving images of view of a scene with inventory items and corresponding indicia using an imaging device; receiving utterances (such as spoken description of inventory items) from a user using a voice recognition system; identifying inventory items in the scene and a corresponding identification code based at least in part on the images and at least in part on the utterances; identifying a plurality of attributes corresponding to the inventory items; and characterizing the inventory items to a planogram based on the respective identification code and plurality of attributes.
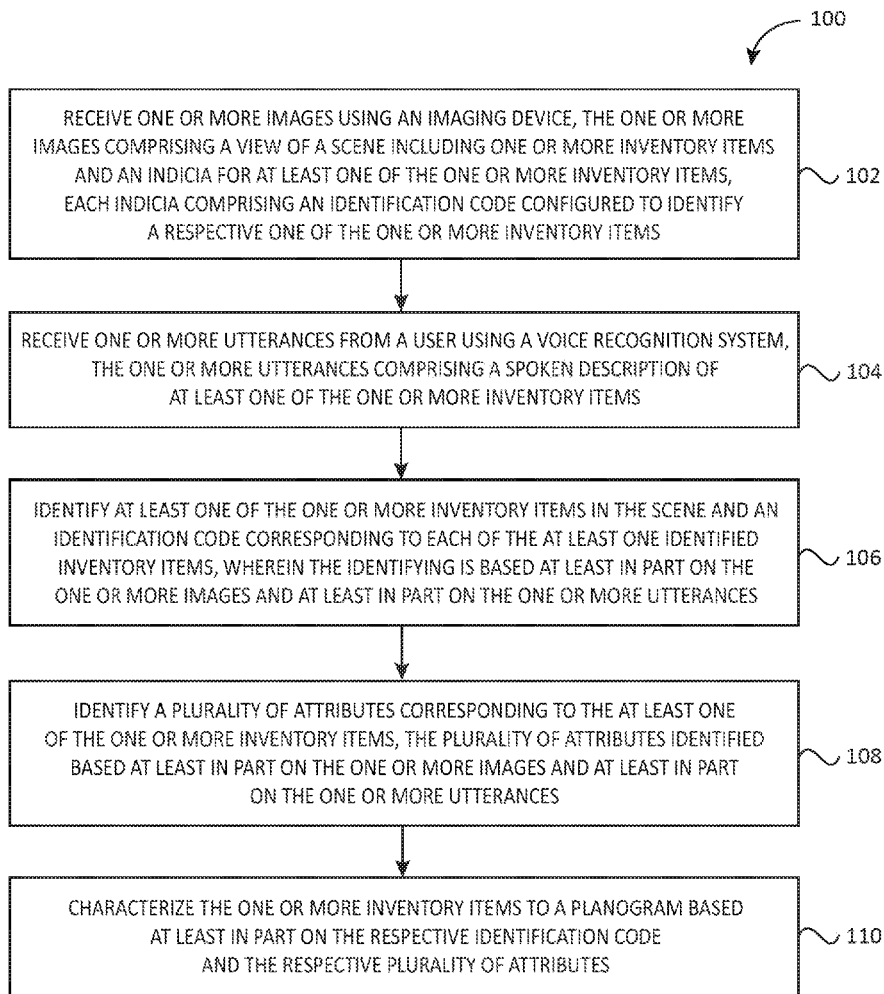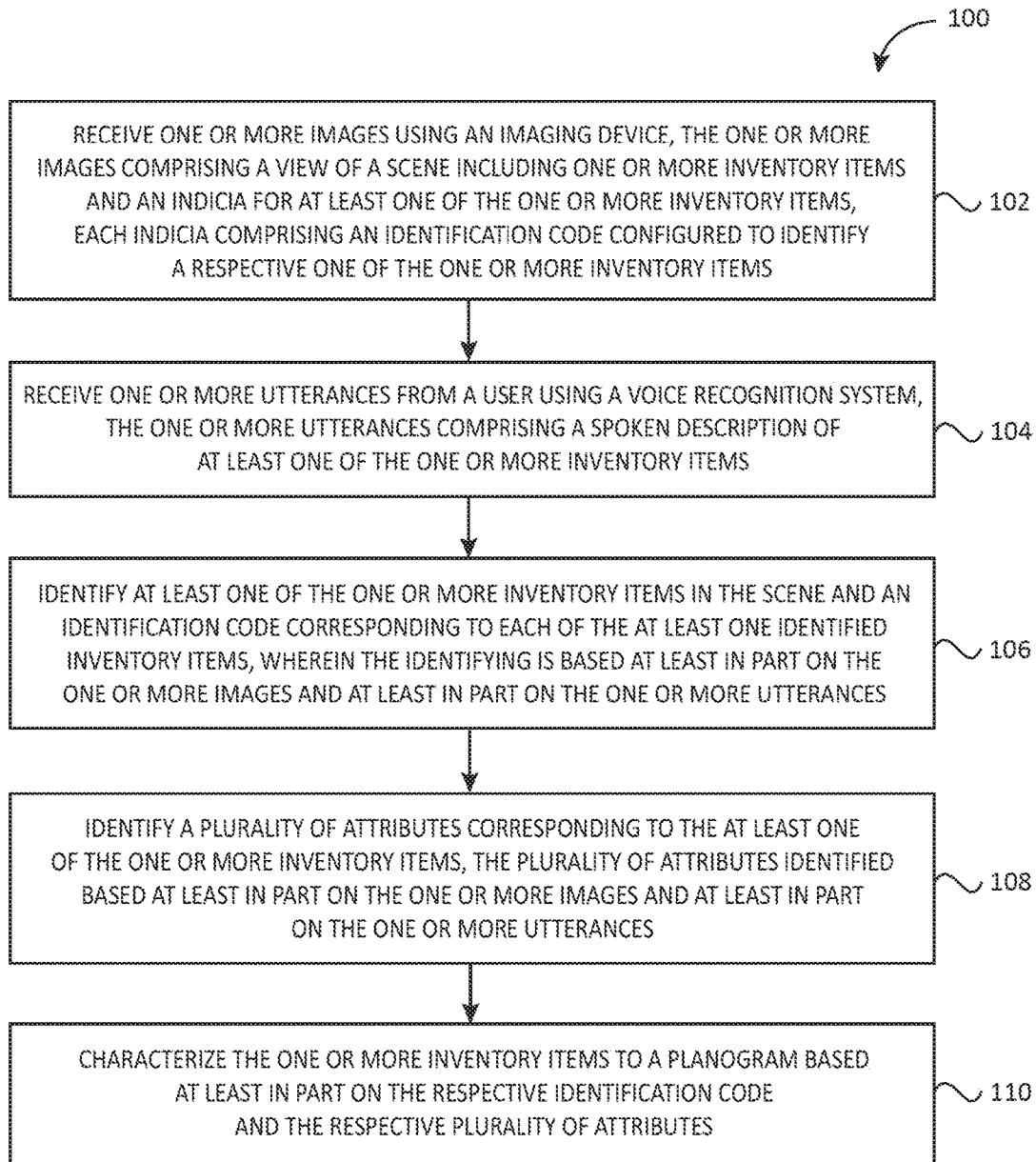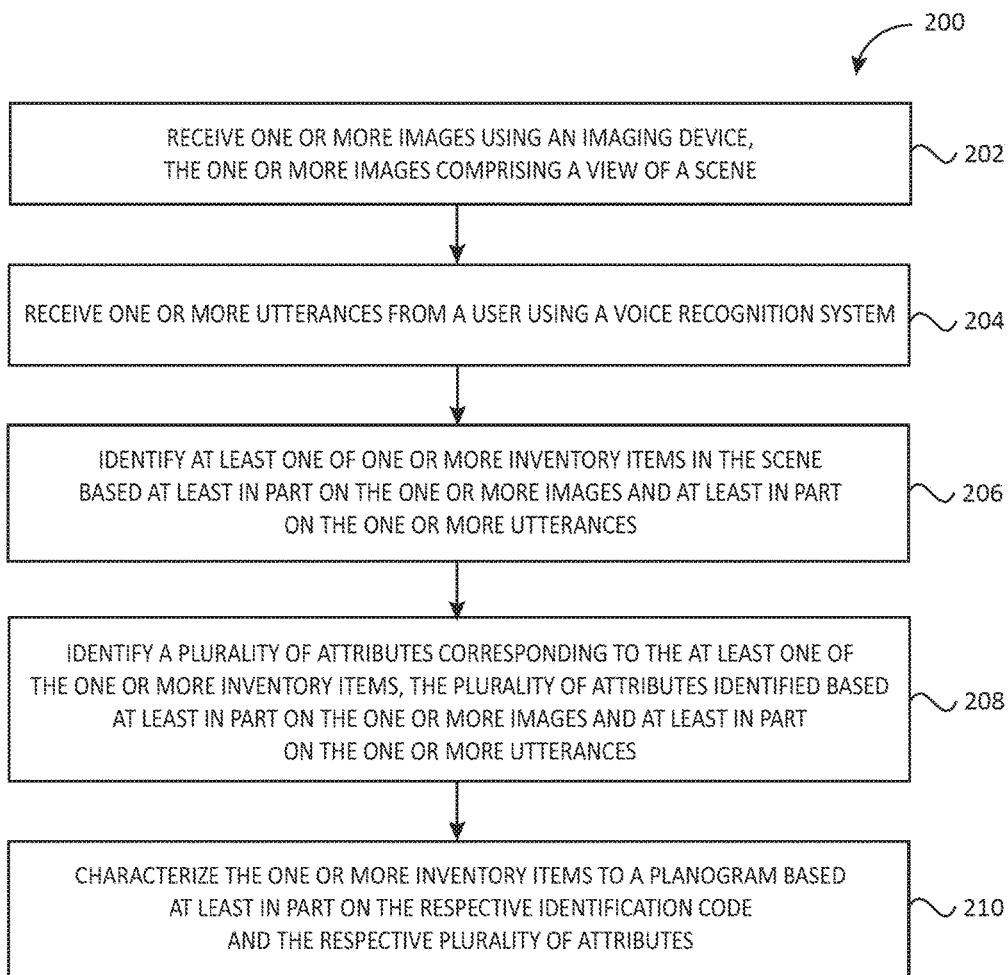
FIG. 1

100

RECEIVE ONE OR MORE IMAGES USING AN IMAGING DEVICE, THE ONE OR MORE
IMAGES COMPRISING A VIEW OF A SCENE INCLUDING ONE OR MORE INVENTORY ITEMS
AND AN INDICIA FOR AT LEAST ONE OF THE ONE OR MORE INVENTORY ITEMS,
EACH INDICIA COMPRISING AN IDENTIFICATION CODE CONFIGURED TO IDENTIFY
A RESPECTIVE ONE OF THE ONE OR MORE INVENTORY ITEMS

102

RECEIVE ONE OR MORE UTTERANCES FROM A USER USING A VOICE RECOGNITION SYSTEM,
THE ONE OR MORE UTTERANCES COMPRISING A SPOKEN DESCRIPTION OF
AT LEAST ONE OF THE ONE OR MORE INVENTORY ITEMS

104

IDENTIFY AT LEAST ONE OF THE ONE OR MORE INVENTORY ITEMS IN THE SCENE AND AN
IDENTIFICATION CODE CORRESPONDING TO EACH OF THE AT LEAST ONE IDENTIFIED
INVENTORY ITEMS, WHEREIN THE IDENTIFYING IS BASED AT LEAST IN PART ON THE
ONE OR MORE IMAGES AND AT LEAST IN PART ON THE ONE OR MORE UTTERANCES

106

IDENTIFY A PLURALITY OF ATTRIBUTES CORRESPONDING TO THE AT LEAST ONE
OF THE ONE OR MORE INVENTORY ITEMS, THE PLURALITY OF ATTRIBUTES IDENTIFIED
BASED AT LEAST IN PART ON THE ONE OR MORE IMAGES AND AT LEAST IN PART
ON THE ONE OR MORE UTTERANCES

108

CHARACTERIZE THE ONE OR MORE INVENTORY ITEMS TO A PLANOGRAM BASED
AT LEAST IN PART ON THE RESPECTIVE IDENTIFICATION CODE
AND THE RESPECTIVE PLURALITY OF ATTRIBUTES

110

FIG. 2

200

| RECEIVE ONE OR MORE IMAGES USING AN IMAGING DEVICE, THE ONE OR MORE IMAGES COMPRISING A VIEW OF A SCENE | 202 |

| RECEIVE ONE OR MORE UTTERANCES FROM A USER USING A VOICE RECOGNITION SYSTEM | 204 |

| IDENTIFY AT LEAST ONE OF ONE OR MORE INVENTORY ITEMS IN THE SCENE BASED AT LEAST IN PART ON THE ONE OR MORE IMAGES AND AT LEAST IN PART ON THE ONE OR MORE UTTERANCES | 206 |

| IDENTIFY A PLURALITY OF ATTRIBUTES CORRESPONDING TO THE AT LEAST ONE OF THE ONE OR MORE INVENTORY ITEMS, THE PLURALITY OF ATTRIBUTES IDENTIFIED BASED AT LEAST IN PART ON THE ONE OR MORE IMAGES AND AT LEAST IN PART ON THE ONE OR MORE UTTERANCES | 208 |

| CHARACTERIZE THE ONE OR MORE INVENTORY ITEMS TO A PLANOGRAM BASED AT LEAST IN PART ON THE RESPECTIVE IDENTIFICATION CODE AND THE RESPECTIVE PLURALITY OF ATTRIBUTES | 210 |

METHOD AND SYSTEM FOR INPUTTING PRODUCTS INTO AN INVENTORY SYSTEM

CROSS-REFERENCE TO RELATED APPLICATION

[0001] The present application claims the benefit of U.S. Patent Application No. 62/457,242 for a Method and System for Inputting Products into an Inventory System filed Feb. 10, 2017, which is hereby incorporated by reference in its entirety.

FIELD OF THE INVENTION

[0002] The present invention relates to inventory systems.

BACKGROUND

[0003] Generally speaking, entering product information into a newly installed retail system heavily relies on importing data from an external database or entering all the information manually. To address situations when such information is missing or incomplete, a more efficient solution is required.

[0004] Some attempts have been made to resolve this issue. For example, U.S. Pat. Appl. No. 20,130,173,435 by Cozad discloses systems and methods for managing product location information. The application focuses on scanning item identifiers corresponding to items on the shelves of a store, and creating a planogram of a store when necessary. U.S. Pat. App. No. 20,130,037,613 by Soldate discloses apparatus, system, and method to stock product and maintain inventory, and focuses on providing instructions to correctly stock a product, providing a next task upon completion of the stocking, and updating an inventory database based on completion of the stocking. A user provides stocking confirmation by scanning device or through voice input, and updates inventory management database by stocking product to a particular location using scanners or other handheld devices. U.S. Pat. App. No. 20,140,003,727 by Lortz et al. discloses image-augmented inventory management and wayfinding. The application focuses on receiving a query regarding an establishment, retrieving an output image from an image database in response to the query, and transmitting the output image to a mobile device. However, none of the references explicitly mentions a workflow capable of allowing a user to direct an employee to describe location of retail inventory, especially using verbal commands on the go, along with configuring or updating a database of the inventory management system.

[0005] Therefore, a need exists for a method and system for efficiently entering product information into an inventory system.

SUMMARY

[0006] Accordingly, the present invention embraces methods for inputting products into an inventory system.

[0007] In an exemplary embodiment, a method of characterizing one or more inventory items to a planogram includes receiving images using an imaging device, the images including a view of a scene with inventory items and an indicia for the inventory items, each indicia comprising an identification code configured to identify a respective inventory item; receiving utterances (such as spoken description of inventory items) from a user using a voice recognition system; identifying inventory items in the scene and an identification code corresponding to each of the identified inventory items; identifying a plurality of attributes corresponding to the inventory items; and characterizing the inventory items to a planogram based at least in part on the respective identification code and the respective plurality of attributes.

[0008] In another exemplary embodiment, a method of characterizing inventory items to a planogram includes receiving images using an imaging device, the images including a view of a scene; receiving utterances from a user using a voice recognition system; identifying at least one of inventory items in the scene based at least in part on the images and at least in part on the utterances; identifying a plurality of attributes corresponding to the inventory items, the plurality of attributes identified based at least in part on the images and at least in part on the utterances; and characterizing the inventory items to a planogram based at least in part on a respective identification code and the respective plurality of attributes.

[0009] The foregoing illustrative summary, as well as other exemplary objectives and/or advantages of the invention, and the manner in which the same are accomplished, are further explained within the following detailed description and its accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. 1 schematically depicts a method of characterizing one or more inventory items to a planogram, according to an embodiment.

[0011] FIG. 2 schematically depicts a method of characterizing one or more inventory items to a planogram, according to another embodiment.

DETAILED DESCRIPTION

[0012] The present invention embraces methods for inputting products into an inventory system.

[0013] When an inventory system is initially installed at a business or warehouse (e.g., a retail business), the installer typically must manually enter all of the product information into the inventory system or import the data from an external system. In many real-life situations, the customer (i.e., the business or warehouse at which the inventory system is being installed) does not have the product information or only has incomplete product information.

[0014] The present invention embraces a method and system for entering product information into an inventory system (e.g., a retail inventor system). In typical embodiments, the product information is entered via a workflow, which may be voice-directed. The method and system permit a user to describe the location of a product (e.g., by speaking into a microphone or entering text via a keyboard or touchscreen input device), scan a product-identifying symbol (e.g., an indicia, barcode, UPC symbol, 2D barcode, QR code, text on the packaging), input a shelf label (e.g., via scanning, speech input, text input via a keyboard or touchscreen input device), capture an image of the product (e.g., with the device used to capture the location of the product, with the device used to scan the product-identifying symbol, with another device, and/or with a head-mounted display device that includes an image sensor). Each item of information captured by the user can be stored on one of the devices used to capture the information and later transmitted to the inventory system and/or transmitted directly to the

inventory system. In exemplary embodiments, the method and system direct a user through a workflow to achieve the input of the product information into the inventory system. The workflow may be visually directed and/or voice-directed, for example, using one or more devices available from Vocollect and/or Honeywell, such as the Dolphin CT50 and the Dolphin 75.

[0015] In exemplary embodiments, the workflow, which can be visually directed and/or voice directed, allows a user to direct an employee to describe the location, scan the barcode and shelf label, take a picture with the device, and record the current inventory of each product that needs to be entered into an inventory management system. In situations where the location information of an inventory is not available from an external resource such as, a database, the user can describe the location using verbal commands while moving in the inventory and accordingly the database of the inventory management system would be configured or updated.

[0016] FIG. 1 shows a method 100 of characterizing one or more inventory items to a planogram, according to an embodiment. At 102, one or more images are received using an imaging device, the one or more images comprising a view of a scene including one or more inventory items and an indicia for at least one of the one or more inventory items, each indicia comprising an identification code configured to identify a respective one of the one or more inventory items. At 104, one or more utterances are received from a user using a voice recognition system, the one or more utterances comprising a spoken description of at least one of the one or more inventory items. 106 includes identifying at least one of the one or more inventory items in the scene and an identification code corresponding to each of the at least one identified inventory items, wherein the identifying is based at least in part on the one or more images and at least in part on the one or more utterances. At 108, a plurality of attributes corresponding to the at least one of the one or more inventory items is identified, the plurality of attributes identified based at least in part on the one or more images and at least in part on the one or more utterances. And at 110, the one or more inventory items are characterized to a planogram based at least in part on the respective identification code and the respective plurality of attributes.

[0017] In an embodiment, the one or more images comprising the view of the scene can include one or more of: a location corresponding to at least one of the one or more inventory items in the scene; a quantity corresponding to at least one of the one or more inventory items in the scene; a facing arrangement corresponding to at least one of the one or more inventory items in the scene; a floor layout corresponding to at least one of the one or more inventory items in the scene; a fixture attribute corresponding to at least one of the one or more inventory items in the scene; and an identification code corresponding to at least one of the one or more inventory items in the scene.

[0018] In an embodiment, the one or more utterances can include one or more of: a location corresponding to at least one of the one or more inventory items in the scene; a quantity corresponding to at least one of the one or more inventory items in the scene; a facing arrangement corresponding to at least one of the one or more inventory items in the scene; a floor layout corresponding to at least one of the one or more inventory items in the scene; a fixture attribute corresponding to at least one of the one or more

inventory items in the scene; and an identification code corresponding to at least one of the one or more inventory items.

[0019] In the method 100, the plurality of attributes can include one or more of: a location corresponding to a respective inventory item; a quantity corresponding to a respective inventory item; a facing arrangement corresponding to a respective inventory item; a floor layout corresponding to a respective inventory item; and a fixture attribute corresponding to a respective inventory item.

[0020] In an embodiment, the planogram can include: a visual representation of the scene, the visual representation based at least in part on the one or more images and at least in part on the one or more utterances; a description of the at least one of the one or more inventory items in the scene, the description comprising a visual representation of the inventory item and/or a textual description of the inventory item, wherein the description is based at least in part on the one or more utterances; and a description of the plurality of attributes corresponding to the at least one of the one or more inventory items, the description comprising a visual representation of at least some of the attributes and a textural description of at least some of attributes.

[0021] In the method 100, the description of the at least one of the one or more inventory items in the scene can include an identification code corresponding to at least one of the one or more inventory items in the scene. The description of the plurality of attributes corresponding to the at least one of the one or more inventory items can include a description of one or more of: a location corresponding to at least one of the one or more inventory items in the scene, the description of the location comprising a visual representation of the location and/or a textual description of the location; a quantity corresponding to at least one of the one or more inventory items in the scene, the description of the quantity comprising a visual representation of the quantity and/or a textual description of the quantity; a facing arrangement corresponding to at least one of the one or more inventory items in the scene, the description of the facing arrangement comprising a visual representation of the facing arrangement and/or a textual description of the facing arrangement; a floor layout corresponding to at least one of the one or more inventory items in the scene, the description of the layout comprising a visual representation of the layout and/or a textual description of the layout; and a fixture attribute corresponding to at least one of the one or more inventory items in the scene, the description of the fixture attributes comprising a visual representation of the fixture attribute and/or a textual description of the fixture attribute.

[0022] In an embodiment, the method 100 can further include identifying a first inventory item based at least in part on the one or more images and at least in part on the one or more utterances. Additionally or alternatively, the method 100 can include identifying a first inventory item based at least in part on the one or more images and identifying a second inventory item based at least in part on the one or more utterances. Additionally or alternatively, the method 100 can include identifying a first inventory item based at least in part on the one or more images and identifying an identification code corresponding to the first inventory item based at least in part on the one or more utterances. Furthermore, the method 100 can include identifying a first inventory item based at least in part on the one or more utterances and identifying an identification code correspond-

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ing to the first inventory item based at least in part on the one or more images. The method **100** can also include identifying a first inventory item based at least in part on the one or more images and at least in part on the one or more utterances, and identifying an identification code corresponding to the first inventory item based at least in part on the one or more images and at least in part on the one or more utterances.

[0023] In an embodiment, the identification code can include a shelf identification code, and/or an SKU code. The one or more utterances can include a spoken name for an inventory item, a spoken identification code corresponding to an inventory item, and/or a spoken description of one or more of the plurality of attributes. The spoken description of the one or more of the plurality of attributes can include one or more of: a spoken description of a location corresponding to a respective inventory item; a spoken description of a quantity corresponding to a respective inventory item; a spoken description of a facing arrangement corresponding to a respective inventory item; a spoken description of a floor layout corresponding to a respective inventory item; and a spoken description of a fixture attribute corresponding to a respective inventory item.

[0024] FIG. 2 shows a method **200** of characterizing one or more inventory items to a planogram, according to an embodiment. At **202**, one or more images are received using an imaging device. The one or more images include a view of a scene including one or more inventory items and one or more of: an indicia for at least one of the one or more inventory items, each indicia comprising an identification code configured to identify a respective one of the one or more inventory items; a location corresponding to at least one of the one or more inventory items in the scene; a quantity corresponding to at least one of the one or more inventory items in the scene; a facing arrangement corresponding to at least one of the one or more inventory items in the scene; a floor layout corresponding to at least one of the one or more inventory items in the scene; and a fixture attribute corresponding to at least one of the one or more inventory items in the scene. At **204**, one or more utterances from a user are received using a voice recognition system. The one or more utterances include a spoken description of one or more of: at least one of the one or more inventory items; a location corresponding to at least one of the one or more inventory items in the scene; a quantity corresponding to at least one of the one or more inventory items in the scene; a facing arrangement corresponding to at least one of the one or more inventory items in the scene; a floor layout corresponding to at least one of the one or more inventory items in the scene; a fixture attribute corresponding to at least one of the one or more inventory items in the scene; and an identification code corresponding to at least one of the one or more inventory items. At **206**, at least one of the one or more inventory items in the scene is identified based at least in part on the one or more images and at least in part on the one or more utterances. At **208**, a plurality of attributes corresponding to the at least one of the one or more inventory items is identified. The plurality of attributes identified is based at least in part on the one or more images and at least in part on the one or more utterances. The plurality of attributes includes one or more of: a location corresponding to a respective inventory item; a quantity corresponding to a respective inventory item; a facing arrangement corresponding to a respective inventory item; a

floor layout corresponding to a respective inventory item; and a fixture attribute corresponding to a respective inventory item. And at **210**, the one or more inventory items are characterized to a planogram based at least in part on the respective identification code and the respective plurality of attributes. The planogram includes: a visual representation of the scene, the visual representation based at least in part on the one or more images and at least in part on the one or more utterances; a description of the at least one of the one or more inventory items in the scene and of the corresponding identification codes, the description comprising a visual representation of the inventory item and/or a textual description of the inventory item, wherein the description is based at least in part on the one or more utterances; and a description of placement of the at least one of the one or more inventory items in the scene. The placement is in respect of one or more of the following attributes respectively corresponding to the at least one of the one or more inventory items: a location corresponding to at least one of the one or more inventory items in the scene, the description of the location comprising a visual representation of the location and/or a textual description of the location; a quantity corresponding to at least one of the one or more inventory items in the scene, the description of the quantity comprising a visual representation of the quantity and/or a textual description of the quantity; a facing arrangement corresponding to at least one of the one or more inventory items in the scene, the description of the facing arrangement comprising a visual representation of the facing arrangement and/or a textual description of the facing arrangement; a floor layout corresponding to at least one of the one or more inventory items in the scene, the description of the layout comprising a visual representation of the layout and/or a textual description of the layout; and a fixture attribute corresponding to at least one of the one or more inventory items in the scene, the description of the fixture attributes comprising a visual representation of the fixture attribute and/or a textual description of the fixture attribute.

[0025] In an embodiment, the method **200** can further include identifying an identification code corresponding to at least one of the one or more inventory items based at least in part on the one or more images and at least in part on the one or more utterances. Additionally or alternatively, the method **200** can include initiating the method **200** at least in part by providing a prompt configured to instruct the user to characterize the one or more inventory items. The prompt can include an audible prompt, the audible prompt including an identification of at least one inventory item.

[0026] Additionally, the method **200** can include providing a prompt configured to instruct the user to characterize the one or more inventory items upon identifying at least one inventory item in the scene based at least in part on the one or more images. The method **200** can also include capturing the one or more images using the imaging device upon receiving the one or more utterances from the user using the voice recognition system.

[0027] In an embodiment, the method **200** can further include receiving coordinates corresponding to one or more of: the location for at least one of the one or more inventory items; the facing arrangement for at least one of the one or more inventory items; and the floor layout for at least one of the one or more inventory items. The coordinates can include geoposition coordinates. The coordinates can be

generated using a Wi-Fi positioning system, and/or using the one or more images comprising the view of the scene.

[0028] Identifying the one or more inventory items in the scene at 206 can include: identifying the one or more indicia in the one or more images comprising the view of the scene; decoding the one or more indicia to obtain the corresponding one or more identification codes; and searching a database to identify the respective one or more inventory items corresponding to the one or more identification codes.

[0029] In an embodiment, identifying the quantity can include identifying a current quantity and/or a stocking quantity based at least in part on the one or more images, and/or based at least in part on the one or more utterances.

[0030] The method 200 can include generating the planogram in a two-dimensional graphic corresponding to the view of the scene and/or in a three-dimensional graphic corresponding to the view of the scene. Additionally or alternatively, the method 200 can include transposing the one or more images, providing a view of the scene from a different orientation, and wherein the planogram comprising the visual representation corresponds to the different orientation.

[0031] In an embodiment, the planogram can include instructions for positioning the one or more inventory items on the one or more fixture attributes. The method 200 can include storing the planogram in a database. Additionally or alternatively, the method 200 can include storing at least one of the following aspects of information pertaining to the one or more inventory items in one or more nascent database entries: the visual representation of the scene; the description of the at least one of the one or more inventory items in the scene and of the corresponding identification codes; the description of the location corresponding to at least one of the one or more inventory items in the scene; the description of the quantity corresponding to at least one of the one or more inventory items in the scene; the description of the facing arrangement corresponding to at least one of the one or more inventory items in the scene; the description of the floor layout corresponding to at least one of the one or more inventory items in the scene; the description of the fixture attribute corresponding to at least one of the one or more inventory items in the scene; and the description of the placement of the at least one of the one or more inventory items in the scene in respect of the one or more attributes.

[0032] In an embodiment, at least one of the following aspects of information pertaining to the one or more inventory items may have been unavailable prior to receiving the one or more images and/or prior to receiving the one or more utterances: the visual representation of the scene; the description of the at least one of the one or more inventory items in the scene and of the corresponding identification codes; the description of the location corresponding to at least one of the one or more inventory items in the scene; the description of the quantity corresponding to at least one of the one or more inventory items in the scene; the description of the facing arrangement corresponding to at least one of the one or more inventory items in the scene; the description of the floor layout corresponding to at least one of the one or more inventory items in the scene; the description of the fixture attribute corresponding to at least one of the one or more inventory items in the scene; and the description of the placement of the at least one of the one or more inventory items in the scene in respect of the one or more attributes.

[0033] In an embodiment, the description of the location and/or the description of the quantity corresponding to the at least one of the one or more inventory items in the scene can include coordinates corresponding to one or more of: the location corresponding to the at least one of the one or more inventory items; the facing arrangement corresponding to the at least one of the one or more inventory items; the floor layout corresponding to the at least one of the one or more inventory items; and the fixture attribute corresponding to the at least one of the one or more inventory items. Additionally or alternatively, the description of the location and/or the quantity corresponding to the at least one of the one or more inventory items can include a current quantity and/or a stocking quantity.

[0034] In an embodiment, the one or more utterances from the user can be received contemporaneously with the one or more images from the imaging device. Alternatively, the one or more utterances from the user can be received separately in time from the one or more images from the imaging device. The method 200 can include receiving the one or more utterances from a first user operating the voice recognition system, and receiving the one or more images from a second user operating the imaging device.

[0035] In an embodiment, the view of the scene can include a retail environment selected from the group consisting of: a softline retailer; a grocery retailer; a food retailer; a convenience retailer; a hardline retailer; and a specialty retailer. Additionally or alternatively, the view of the scene can include a retail environment selected from the group consisting of: a department store; a clothing store; a clothing store; a footwear store; a toiletries store; a cosmetics store; a pharmacy; an office-supply store; a discount outlet; a grocery store; a supermarket; a hypermarket; a convenience store; a big-box store; a restaurant; a fruit stand; a bakery; a coffee shop; a farmer's market; a home-improvement store; a hardware store; a warehouse club; an electronics store; an automobile dealership; an appliance store; a furniture store; a sporting goods store; a lumber yard; a bookstore; an art gallery; a craft store; a music store; a musical instrument store; a boutique; a jewelry store; a gift shop; an arcade; a bazaar; a toy store; a category killer; a chain store; a concept store; a co-operative store; a destination store; a general store; a mall; a kiosk; a pop-up retail store; and a retail market.

[0036] The method 200 can include providing stocking instructions based at least in part on the planogram. The planogram may characterize a customized store layout. The customized store layout can be selected based at least in part on localized customer desires and/or localized demand. The planogram may incorporate corporate-level business rules and/or best practices pertaining to product placement.

[0037] Additionally, the method 200 can include obtaining sales data corresponding to at least one of the one or more inventory items, the sales data stored in a database; calculating a performance metric corresponding to at least one of the one or more inventory items; and characterizing the at least one of the one or more inventory items to the planogram based at least in part on the performance metric. The planogram can include a modification to one or more of: the location corresponding to the at least one of the one or more inventory items in the scene; the quantity corresponding to the at least one of the one or more inventory items in the scene; the facing arrangement corresponding to the at least one of the one or more inventory items in the scene; the floor

layout corresponding to the at least one of the one or more inventory items in the scene; and the fixture attribute corresponding to the at least one of the one or more inventory items. In an embodiment, the metric can include one or more of: sales value; gross margin; profit margin; inventory turn; customer conversion ratio; shelf space; and items per purchase.

[0038] In an embodiment, the method **200** can include user capturing the one or more images using the imaging device while working in a retail environment in which the one or more inventory items are sold, the working at least in part comprising a task customarily performed by a worker in the retail environment. The imaging device can include a camera and/or a scanner.

[0039] Additionally, the method **200** can include receiving one or more manual inputs from a hand-operated input device, wherein the planogram is based at least in part on the one or more manual inputs. The method **200** can also include providing a workflow to the user while the user is working in a retail environment in which the one or more inventory items are sold. The workflow can be configured to direct the user to: capture the one or more images using the imaging device while working in the retail environment; and/or provide the one or more utterances using the voice recognition system; wherein the working at least in part comprising a task customarily performed by a worker in the retail environment. The workflow can include a voice directed workflow, the voice directed workflow provided by an audio headset. Additionally or alternatively, the workflow can include a visually directed workflow, the visually directed workflow provided on a screen of a mobile device.

[0040] In an embodiment, the location corresponding to the at least one of the one or more inventory items in the scene may be unavailable from any database resource prior to receiving the one or more images and/or prior to receiving the one or more utterances. The workflow may be prepared in advance based at least in part on known attributes of the retail environment. Additionally or alternatively, the workflow may be generated in real-time while the user is working in a retail environment in which the one or more inventory items are sold. The method **200** can include using the one or more images and/or the one or more utterances to generate a workflow in real-time while the user is working in a retail environment in which the one or more inventory items are sold.

[0041] Device and method components are meant to show only those specific details that are pertinent to understanding the embodiments of the present disclosure so as not to obscure the disclosure with details that will be readily apparent to those of ordinary skill in the art having the benefit of the description herein. In various embodiments, the sequence in which the elements of appear in exemplary embodiments disclosed herein may vary. Two or more method steps may be performed simultaneously or in a different order than the sequence in which the elements appear in the exemplary embodiments.

[0042] To supplement the present disclosure, this application incorporates entirely by reference the following commonly assigned patents, patent application publications, and patent applications:

[0043] U.S. Pat. No. 6,832,725; U.S. Pat. No. 7,128,266; U.S. Pat. No. 7,159,783; U.S. Pat. No. 7,413,1279; U.S. Pat. No. 7,726,575; U.S. Pat. No. 8,294,969; U.S. Pat. No. 8,317,105; U.S. Pat. No. 8,322,622; U.S. Pat. No. 8,366,

005; U.S. Pat. No. 8,371,507; U.S. Pat. No. 8,376,233; U.S. Pat. No. 8,381,979; U.S. Pat. No. 8,390,909; U.S. Pat. No. 8,408,464; U.S. Pat. No. 8,408,468; U.S. Pat. No. 8,408,469; U.S. Pat. No. 8,424,768; U.S. Pat. No. 8,448,863; U.S. Pat. No. 8,457,013; U.S. Pat. No. 8,459,557; U.S. Pat. No. 8,469,272; U.S. Pat. No. 8,474,712; U.S. Pat. No. 8,479,992; U.S. Pat. No. 8,490,877; U.S. Pat. No. 8,517,271; U.S. Pat. No. 8,523,076; U.S. Pat. No. 8,528,818; U.S. Pat. No. 8,544,737; U.S. Pat. No. 8,548,242; U.S. Pat. No. 8,548,420; U.S. Pat. No. 8,550,335; U.S. Pat. No. 8,550,354; U.S. Pat. No. 8,550,357; U.S. Pat. No. 8,556,174; U.S. Pat. No. 8,556,176; U.S. Pat. No. 8,556,177; U.S. Pat. No. 8,559,767; U.S. Pat. No. 8,599,957; U.S. Pat. No. 8,561,895; U.S. Pat. No. 8,561,903; U.S. Pat. No. 8,561,905; U.S. Pat. No. 8,565,107; U.S. Pat. No. 8,571,307; U.S. Pat. No. 8,579,200; U.S. Pat. No. 8,583,924; U.S. Pat. No. 8,584,945; U.S. Pat. No. 8,587,595; U.S. Pat. No. 8,587,697; U.S. Pat. No. 8,588,869; U.S. Pat. No. 8,590,789; U.S. Pat. No. 8,596,539; U.S. Pat. No. 8,596,542; U.S. Pat. No. 8,596,543; U.S. Pat. No. 8,599,271; U.S. Pat. No. 8,599,957; U.S. Pat. No. 8,600,158; U.S. Pat. No. 8,600,167; U.S. Pat. No. 8,602,309; U.S. Pat. No. 8,608,053; U.S. Pat. No. 8,608,071; U.S. Pat. No. 8,611,309; U.S. Pat. No. 8,615,487; U.S. Pat. No. 8,616,454; U.S. Pat. No. 8,621,123; U.S. Pat. No. 8,622,303; U.S. Pat. No. 8,628,013; U.S. Pat. No. 8,628,015; U.S. Pat. No. 8,628,016; U.S. Pat. No. 8,629,926; U.S. Pat. No. 8,630,491; U.S. Pat. No. 8,635,309; U.S. Pat. No. 8,636,200; U.S. Pat. No. 8,636,212; U.S. Pat. No. 8,636,215; U.S. Pat. No. 8,636,224; U.S. Pat. No. 8,638,806; U.S. Pat. No. 8,640,958; U.S. Pat. No. 8,640,960; U.S. Pat. No. 8,643,717; U.S. Pat. No. 8,646,692; U.S. Pat. No. 8,646,694; U.S. Pat. No. 8,657,200; U.S. Pat. No. 8,659,397; U.S. Pat. No. 8,668,149; U.S. Pat. No. 8,678,285; U.S. Pat. No. 8,678,286; U.S. Pat. No. 8,682,077; U.S. Pat. No. 8,687,282; U.S. Pat. No. 8,692,927; U.S. Pat. No. 8,695,880; U.S. Pat. No. 8,698,949; U.S. Pat. No. 8,717,494; U.S. Pat. No. 8,717,494; U.S. Pat. No. 8,720,783; U.S. Pat. No. 8,723,804; U.S. Pat. No. 8,723,904; U.S. Pat. No. 8,727,223; U.S. Pat. No. 8,740,082; U.S. Pat. No. 8,740,085; U.S. Pat. No. 8,746,563; U.S. Pat. No. 8,750,445; U.S. Pat. No. 8,752,766; U.S. Pat. No. 8,756,059; U.S. Pat. No. 8,757,495; U.S. Pat. No. 8,760,563; U.S. Pat. No. 8,763,909; U.S. Pat. No. 8,777,108; U.S. Pat. No. 8,777,109; U.S. Pat. No. 8,779,898; U.S. Pat. No. 8,781,520; U.S. Pat. No. 8,783,573; U.S. Pat. No. 8,789,757; U.S. Pat. No. 8,789,758; U.S. Pat. No. 8,789,759; U.S. Pat. No. 8,794,520; U.S. Pat. No. 8,794,522; U.S. Pat. No. 8,794,525; U.S. Pat. No. 8,794,526; U.S. Pat. No. 8,798,367; U.S. Pat. No. 8,807,431; U.S. Pat. No. 8,807,432; U.S. Pat. No. 8,820,630; U.S. Pat. No. 8,822,848; U.S. Pat. No. 8,824,692; U.S. Pat. No. 8,824,696; U.S. Pat. No. 8,842,849; U.S. Pat. No. 8,844,822; U.S. Pat. No. 8,844,823; U.S. Pat. No. 8,849,019; U.S. Pat. No. 8,851,383; U.S. Pat. No. 8,854,633; U.S. Pat. No. 8,866,963; U.S. Pat. No. 8,868,421; U.S. Pat. No. 8,868,519; U.S. Pat. No. 8,868,802; U.S. Pat. No. 8,868,803; U.S. Pat. No. 8,870,074; U.S. Pat. No. 8,879,639; U.S. Pat. No. 8,880,426; U.S. Pat. No. 8,881,983; U.S. Pat. No. 8,881,987; U.S. Pat. No. 8,903,172; U.S. Pat. No. 8,908,995; U.S. Pat. No. 8,910,870; U.S. Pat. No. 8,910,875; U.S. Pat. No. 8,914,290; U.S. Pat. No. 8,914,788; U.S. Pat. No. 8,915,439; U.S. Pat. No. 8,915,444; U.S. Pat. No. 8,916,789; U.S. Pat. No. 8,918,250; U.S. Pat. No. 8,918,564; U.S. Pat. No. 8,925,

818; U.S. Pat. No. 8,939,374; U.S. Pat. No. 8,942,480; U.S. Pat. No. 8,944,313; U.S. Pat. No. 8,944,327; U.S. Pat. No. 8,944,332; U.S. Pat. No. 8,950,678; U.S. Pat. No. 8,967,468; U.S. Pat. No. 8,971,346; U.S. Pat. No. 8,976,030; U.S. Pat. No. 8,976,368; U.S. Pat. No. 8,978,981; U.S. Pat. No. 8,978,983; U.S. Pat. No. 8,978,984; U.S. Pat. No. 8,985,456; U.S. Pat. No. 8,985,457; U.S. Pat. No. 8,985,459; U.S. Pat. No. 8,985,461; U.S. Pat. No. 8,988,578; U.S. Pat. No. 8,988,590; U.S. Pat. No. 8,991,704; U.S. Pat. No. 8,996,194; U.S. Pat. No. 8,996,384; U.S. Pat. No. 9,002,641; U.S. Pat. No. 9,007,368; U.S. Pat. No. 9,010,641; U.S. Pat. No. 9,015,513; U.S. Pat. No. 9,016,576; U.S. Pat. No. 9,022,288; U.S. Pat. No. 9,030,964; U.S. Pat. No. 9,033,240; U.S. Pat. No. 9,033,242; U.S. Pat. No. 9,036,054; U.S. Pat. No. 9,037,344; U.S. Pat. No. 9,038,911; U.S. Pat. No. 9,038,915; U.S. Pat. No. 9,047,098; U.S. Pat. No. 9,047,359; U.S. Pat. No. 9,047,420; U.S. Pat. No. 9,047,525; U.S. Pat. No. 9,047,531; U.S. Pat. No. 9,053,055; U.S. Pat. No. 9,053,378; U.S. Pat. No. 9,053,380; U.S. Pat. No. 9,058,526; U.S. Pat. No. 9,064,165; U.S. Pat. No. 9,064,165; U.S. Pat. No. 9,064,167; U.S. Pat. No. 9,064,168; U.S. Pat. No. 9,064,254; U.S. Pat. No. 9,066,032; U.S. Pat. No. 9,070,032; U.S. Pat. No. 9,076,459; U.S. Pat. No. 9,079,423; U.S. Pat. No. 9,080,856; U.S. Pat. No. 9,082,023; U.S. Pat. No. 9,082,031; U.S. Pat. No. 9,084,032; U.S. Pat. No. 9,087,250; U.S. Pat. No. 9,092,681; U.S. Pat. No. 9,092,682; U.S. Pat. No. 9,092,683; U.S. Pat. No. 9,093,141; U.S. Pat. No. 9,098,763; U.S. Pat. No. 9,104,929; U.S. Pat. No. 9,104,934; U.S. Pat. No. 9,107,484; U.S. Pat. No. 9,111,159; U.S. Pat. No. 9,111,166; U.S. Pat. No. 9,135,483; U.S. Pat. No. 9,137,009; U.S. Pat. No. 9,141,839; U.S. Pat. No. 9,147,096; U.S. Pat. No. 9,148,474; U.S. Pat. No. 9,158,000; U.S. Pat. No. 9,158,340; U.S. Pat. No. 9,158,953; U.S. Pat. No. 9,159,059; U.S. Pat. No. 9,165,174; U.S. Pat. No. 9,171,543; U.S. Pat. No. 9,183,425; U.S. Pat. No. 9,189,669; U.S. Pat. No. 9,195,844; U.S. Pat. No. 9,202,458; U.S. Pat. No. 9,208,366; U.S. Pat. No. 9,208,367; U.S. Pat. No. 9,219,836; U.S. Pat. No. 9,224,024; U.S. Pat. No. 9,224,027; U.S. Pat. No. 9,230,140; U.S. Pat. No. 9,235,553; U.S. Pat. No. 9,239,950; U.S. Pat. No. 9,245,492; U.S. Pat. No. 9,248,640; U.S. Pat. No. 9,250,652; U.S. Pat. No. 9,250,712; U.S. Pat. No. 9,251,411; U.S. Pat. No. 9,258,033; U.S. Pat. No. 9,262,633; U.S. Pat. No. 9,262,660; U.S. Pat. No. 9,262,662; U.S. Pat. No. 9,269,036; U.S. Pat. No. 9,270,782; U.S. Pat. No. 9,274,812; U.S. Pat. No. 9,275,388; U.S. Pat. No. 9,277,668; U.S. Pat. No. 9,280,693; U.S. Pat. No. 9,286,496; U.S. Pat. No. 9,298,964; U.S. Pat. No. 9,301,427; U.S. Pat. No. 9,313,377; U.S. Pat. No. 9,317,037; U.S. Pat. No. 9,319,548; U.S. Pat. No. 9,342,723; U.S. Pat. No. 9,361,882; U.S. Pat. No. 9,365,381; U.S. Pat. No. 9,373,018; U.S. Pat. No. 9,375,945; U.S. Pat. No. 9,378,403; U.S. Pat. No. 9,383,848; U.S. Pat. No. 9,384,374; U.S. Pat. No. 9,390,304; U.S. Pat. No. 9,390,596; U.S. Pat. No. 9,411,386; U.S. Pat. No. 9,412,242; U.S. Pat. No. 9,418,269; U.S. Pat. No. 9,418,270; U.S. Pat. No. 9,465,967; U.S. Pat. No. 9,423,318; U.S. Pat. No. 9,424,454; U.S. Pat. No. 9,436,860; U.S. Pat. No. 9,443,123; U.S. Pat. No. 9,443,222; U.S. Pat. No. 9,454,689; U.S. Pat. No. 9,464,885; U.S. Pat. No. 9,465,967; U.S. Pat. No. 9,478,983; U.S. Pat. No. 9,481,186; U.S. Pat. No. 9,487,113; U.S. Pat. No. 9,488,986; U.S. Pat. No. 9,489,782; U.S. Pat. No. 9,490,540; U.S. Pat. No. 9,491,729; U.S. Pat. No. 9,497,092; U.S. Pat. No. 9,507,

974; U.S. Pat. No. 9,519,814; U.S. Pat. No. 9,521,331; U.S. Pat. No. 9,530,038; U.S. Pat. No. 9,572,901; U.S. Pat. No. 9,558,386; U.S. Pat. No. 9,606,581; U.S. Pat. No. 9,646,189; U.S. Pat. No. 9,646,191; U.S. Pat. No. 9,652,648; U.S. Pat. No. 9,652,653; U.S. Pat. No. 9,656,487; U.S. Pat. No. 9,659,198; U.S. Pat. No. 9,680,282; U.S. Pat. No. 9,697,401; U.S. Pat. No. 9,701,140; U.S. Design Pat. No. D702,237; U.S. Design Pat. No. D716,285; U.S. Design Pat. No. D723,560; U.S. Design Pat. No. D730,357; U.S. Design Pat. No. D730,901; U.S. Design Pat. No. D730,902; U.S. Design Pat. No. D734,339; U.S. Design Pat. No. D737,321; U.S. Design Pat. No. D754,205; U.S. Design Pat. No. D754,206; U.S. Design Pat. No. D757,009; U.S. Design Pat. No. D760,719; U.S. Design Pat. No. D762,604; U.S. Design Pat. No. D766,244; U.S. Design Pat. No. D777,166; U.S. Design Pat. No. D771,631; U.S. Design Pat. No. D783,601; U.S. Design Pat. No. D785,617; U.S. Design Pat. No. D785,636; U.S. Design Pat. No. D790,505; U.S. Design Pat. No. D790,546; International Publication No. 2013/163789; U.S. Patent Application Publication No. 2008/0185432; U.S. Patent Application Publication No. 2009/0134221; U.S. Patent Application Publication No. 2010/0177080; U.S. Patent Application Publication No. 2010/0177076; U.S. Patent Application Publication No. 2010/0177707; U.S. Patent Application Publication No. 2010/0177749; U.S. Patent Application Publication No. 2010/0265880; U.S. Patent Application Publication No. 2011/0202554; U.S. Patent Application Publication No. 2012/0111946; U.S. Patent Application Publication No. 2012/0168511; U.S. Patent Application Publication No. 2012/0168512; U.S. Patent Application Publication No. 2012/0193423; U.S. Patent Application Publication No. 2012/0194692; U.S. Patent Application Publication No. 2012/0203647; U.S. Patent Application Publication No. 2012/0223141; U.S. Patent Application Publication No. 2012/0228382; U.S. Patent Application Publication No. 2012/0248188; U.S. Patent Application Publication No. 2013/0043312; U.S. Patent Application Publication No. 2013/0082104; U.S. Patent Application Publication No. 2013/0175341; U.S. Patent Application Publication No. 2013/0175343; U.S. Patent Application Publication No. 2013/0257744; U.S. Patent Application Publication No. 2013/0257759; U.S. Patent Application Publication No. 2013/0270346; U.S. Patent Application Publication No. 2013/0292475; U.S. Patent Application Publication No. 2013/0292477; U.S. Patent Application Publication No. 2013/0293539; U.S. Patent Application Publication No. 2013/0293540; U.S. Patent Application Publication No. 2013/0306728; U.S. Patent Application Publication No. 2013/0306731; U.S. Patent Application Publication No. 2013/0307964; U.S. Patent Application Publication No. 2013/0308625; U.S. Patent Application Publication No. 2013/0313324; U.S. Patent Application Publication No. 2013/0332996; U.S. Patent Application Publication No. 2014/0001267; U.S. Patent Application Publication No. 2014/0025584; U.S. Patent Application Publication No. 2014/0034734; U.S. Patent Application Publication No. 2014/0036848; U.S. Patent Application Publication No. 2014/0039693; U.S. Patent Application Publication No. 2014/0049120; U.S. Patent Application Publication No. 2014/0049635; U.S. Patent Application Publication No. 2014/0061306; U.S. Patent Application Publication No. 2014/0063289; U.S. Patent Application Publication No. 2014/

0066136; U.S. Patent Application Publication No. 2014/
0067692; U.S. Patent Application Publication No. 2014/
0070005; U.S. Patent Application Publication No. 2014/
0071840; U.S. Patent Application Publication No. 2014/
0074746; U.S. Patent Application Publication No. 2014/
0076974; U.S. Patent Application Publication No. 2014/
0097249; U.S. Patent Application Publication No. 2014/
0098792; U.S. Patent Application Publication No. 2014/
0100813; U.S. Patent Application Publication No. 2014/
0103115; U.S. Patent Application Publication No. 2014/
0104413; U.S. Patent Application Publication No. 2014/
0104414; U.S. Patent Application Publication No. 2014/
0104416; U.S. Patent Application Publication No. 2014/
0106725; U.S. Patent Application Publication No. 2014/
0108010; U.S. Patent Application Publication No. 2014/
0108402; U.S. Patent Application Publication No. 2014/
0110485; U.S. Patent Application Publication No. 2014/
0125853; U.S. Patent Application Publication No. 2014/
0125999; U.S. Patent Application Publication No. 2014/
0129378; U.S. Patent Application Publication No. 2014/
0131443; U.S. Patent Application Publication No. 2014/
0133379; U.S. Patent Application Publication No. 2014/
0136208; U.S. Patent Application Publication No. 2014/
0140585; U.S. Patent Application Publication No. 2014/
0152882; U.S. Patent Application Publication No. 2014/
0158770; U.S. Patent Application Publication No. 2014/
0159869; U.S. Patent Application Publication No. 2014/
0166759; U.S. Patent Application Publication No. 2014/
0168787; U.S. Patent Application Publication No. 2014/
0175165; U.S. Patent Application Publication No. 2014/
0191684; U.S. Patent Application Publication No. 2014/
0191913; U.S. Patent Application Publication No. 2014/
0197304; U.S. Patent Application Publication No. 2014/
0214631; U.S. Patent Application Publication No. 2014/
0217166; U.S. Patent Application Publication No. 2014/
0231500; U.S. Patent Application Publication No. 2014/
0247315; U.S. Patent Application Publication No. 2014/
0263493; U.S. Patent Application Publication No. 2014/
0263645; U.S. Patent Application Publication No. 2014/
0270196; U.S. Patent Application Publication No. 2014/
0270229; U.S. Patent Application Publication No. 2014/
0278387; U.S. Patent Application Publication No. 2014/
0288933; U.S. Patent Application Publication No. 2014/
0297058; U.S. Patent Application Publication No. 2014/
0299665; U.S. Patent Application Publication No. 2014/
0332590; U.S. Patent Application Publication No. 2014/
0351317; U.S. Patent Application Publication No. 2014/
0362184; U.S. Patent Application Publication No. 2014/
0363015; U.S. Patent Application Publication No. 2014/
0369511; U.S. Patent Application Publication No. 2014/
0374483; U.S. Patent Application Publication No. 2014/
0374485; U.S. Patent Application Publication No. 2015/
0001301; U.S. Patent Application Publication No. 2015/
0001304; U.S. Patent Application Publication No. 2015/
0009338; U.S. Patent Application Publication No. 2015/
0014416; U.S. Patent Application Publication No. 2015/
0021397; U.S. Patent Application Publication No. 2015/
0028104; U.S. Patent Application Publication No. 2015/
0029002; U.S. Patent Application Publication No. 2015/
0032709; U.S. Patent Application Publication No. 2015/
0039309; U.S. Patent Application Publication No. 2015/
0039878; U.S. Patent Application Publication No. 2015/
0040378; U.S. Patent Application Publication No. 2015/
0049347; U.S. Patent Application Publication No. 2015/

0051992; U.S. Patent Application Publication No. 2015/
0053769; U.S. Patent Application Publication No. 2015/
0062366; U.S. Patent Application Publication No. 2015/
0063215; U.S. Patent Application Publication No. 2015/
0088522; U.S. Patent Application Publication No. 2015/
0096872; U.S. Patent Application Publication No. 2015/
0100196; U.S. Patent Application Publication No. 2015/
0102109; U.S. Patent Application Publication No. 2015/
0115035; U.S. Patent Application Publication No. 2015/
0127791; U.S. Patent Application Publication No. 2015/
0128116; U.S. Patent Application Publication No. 2015/
0133047; U.S. Patent Application Publication No. 2015/
0134470; U.S. Patent Application Publication No. 2015/
0136851; U.S. Patent Application Publication No. 2015/
0142492; U.S. Patent Application Publication No. 2015/
0144692; U.S. Patent Application Publication No. 2015/
0144698; U.S. Patent Application Publication No. 2015/
0149946; U.S. Patent Application Publication No. 2015/
0161429; U.S. Patent Application Publication No. 2015/
0178523; U.S. Patent Application Publication No. 2015/
0178537; U.S. Patent Application Publication No. 2015/
0178685; U.S. Patent Application Publication No. 2015/
0181109; U.S. Patent Application Publication No. 2015/
0199957; U.S. Patent Application Publication No. 2015/
0210199; U.S. Patent Application Publication No. 2015/
0212565; U.S. Patent Application Publication No. 2015/
0213647; U.S. Patent Application Publication No. 2015/
0220753; U.S. Patent Application Publication No. 2015/
0220901; U.S. Patent Application Publication No. 2015/
0227189; U.S. Patent Application Publication No. 2015/
0236984; U.S. Patent Application Publication No. 2015/
0239348; U.S. Patent Application Publication No. 2015/
0242658; U.S. Patent Application Publication No. 2015/
0248572; U.S. Patent Application Publication No. 2015/
0254485; U.S. Patent Application Publication No. 2015/
0261643; U.S. Patent Application Publication No. 2015/
0264624; U.S. Patent Application Publication No. 2015/
0268971; U.S. Patent Application Publication No. 2015/
0269402; U.S. Patent Application Publication No. 2015/
0288689; U.S. Patent Application Publication No. 2015/
0288896; U.S. Patent Application Publication No. 2015/
0310243; U.S. Patent Application Publication No. 2015/
0310244; U.S. Patent Application Publication No. 2015/
0310389; U.S. Patent Application Publication No. 2015/
0312780; U.S. Patent Application Publication No. 2015/
0327012; U.S. Patent Application Publication No. 2016/
0014251; U.S. Patent Application Publication No. 2016/
0025697; U.S. Patent Application Publication No. 2016/
0026838; U.S. Patent Application Publication No. 2016/
0026839; U.S. Patent Application Publication No. 2016/
0040982; U.S. Patent Application Publication No. 2016/
0042241; U.S. Patent Application Publication No. 2016/
0057230; U.S. Patent Application Publication No. 2016/
0062473; U.S. Patent Application Publication No. 2016/
0070944; U.S. Patent Application Publication No. 2016/
0092805; U.S. Patent Application Publication No. 2016/
0101936; U.S. Patent Application Publication No. 2016/
0104019; U.S. Patent Application Publication No. 2016/
0104274; U.S. Patent Application Publication No. 2016/
0109219; U.S. Patent Application Publication No. 2016/
0109220; U.S. Patent Application Publication No. 2016/
0109224; U.S. Patent Application Publication No. 2016/
0112631; U.S. Patent Application Publication No. 2016/
0112643; U.S. Patent Application Publication No. 2016/

0117627; U.S. Patent Application Publication No. 2016/
0124516; U.S. Patent Application Publication No. 2016/
0125217; U.S. Patent Application Publication No. 2016/
0125342; U.S. Patent Application Publication No. 2016/
0125873; U.S. Patent Application Publication No. 2016/
0133253; U.S. Patent Application Publication No. 2016/
0171597; U.S. Patent Application Publication No. 2016/
0171666; U.S. Patent Application Publication No. 2016/
0171720; U.S. Patent Application Publication No. 2016/
0171775; U.S. Patent Application Publication No. 2016/
0171777; U.S. Patent Application Publication No. 2016/
0174674; U.S. Patent Application Publication No. 2016/
0178479; U.S. Patent Application Publication No. 2016/
0178685; U.S. Patent Application Publication No. 2016/
0178707; U.S. Patent Application Publication No. 2016/
0179132; U.S. Patent Application Publication No. 2016/
0179143; U.S. Patent Application Publication No. 2016/
0179368; U.S. Patent Application Publication No. 2016/
0179378; U.S. Patent Application Publication No. 2016/
0180130; U.S. Patent Application Publication No. 2016/
0180133; U.S. Patent Application Publication No. 2016/
0180136; U.S. Patent Application Publication No. 2016/
0180594; U.S. Patent Application Publication No. 2016/
0180663; U.S. Patent Application Publication No. 2016/
0180678; U.S. Patent Application Publication No. 2016/
0180713; U.S. Patent Application Publication No. 2016/
0185136; U.S. Patent Application Publication No. 2016/
0185291; U.S. Patent Application Publication No. 2016/
0186926; U.S. Patent Application Publication No. 2016/
0188861; U.S. Patent Application Publication No. 2016/
0188939; U.S. Patent Application Publication No. 2016/
0188940; U.S. Patent Application Publication No. 2016/
0188941; U.S. Patent Application Publication No. 2016/
0188942; U.S. Patent Application Publication No. 2016/
0188943; U.S. Patent Application Publication No. 2016/
0188944; U.S. Patent Application Publication No. 2016/
0189076; U.S. Patent Application Publication No. 2016/
0189087; U.S. Patent Application Publication No. 2016/
0189088; U.S. Patent Application Publication No. 2016/
0189092; U.S. Patent Application Publication No. 2016/
0189284; U.S. Patent Application Publication No. 2016/
0189288; U.S. Patent Application Publication No. 2016/
0189366; U.S. Patent Application Publication No. 2016/
0189443; U.S. Patent Application Publication No. 2016/
0189447; U.S. Patent Application Publication No. 2016/
0189489; U.S. Patent Application Publication No. 2016/
0192051; U.S. Patent Application Publication No. 2016/
0202951; U.S. Patent Application Publication No. 2016/
0202958; U.S. Patent Application Publication No. 2016/
0202959; U.S. Patent Application Publication No. 2016/
0203021; U.S. Patent Application Publication No. 2016/
0203429; U.S. Patent Application Publication No. 2016/
0203797; U.S. Patent Application Publication No. 2016/
0203820; U.S. Patent Application Publication No. 2016/
0204623; U.S. Patent Application Publication No. 2016/
0204636; U.S. Patent Application Publication No. 2016/
0204638; U.S. Patent Application Publication No. 2016/
0227912; U.S. Patent Application Publication No. 2016/
0232891; U.S. Patent Application Publication No. 2016/
0292477; U.S. Patent Application Publication No. 2016/
0294779; U.S. Patent Application Publication No. 2016/
0306769; U.S. Patent Application Publication No. 2016/
0314276; U.S. Patent Application Publication No. 2016/
0314294; U.S. Patent Application Publication No. 2016/

0316190; U.S. Patent Application Publication No. 2016/
0323310; U.S. Patent Application Publication No. 2016/
0325677; U.S. Patent Application Publication No. 2016/
0327614; U.S. Patent Application Publication No. 2016/
0327930; U.S. Patent Application Publication No. 2016/
0328762; U.S. Patent Application Publication No. 2016/
0330218; U.S. Patent Application Publication No. 2016/
0343163; U.S. Patent Application Publication No. 2016/
0343176; U.S. Patent Application Publication No. 2016/
0364914; U.S. Patent Application Publication No. 2016/
0370220; U.S. Patent Application Publication No. 2016/
0372282; U.S. Patent Application Publication No. 2016/
0373847; U.S. Patent Application Publication No. 2016/
0377414; U.S. Patent Application Publication No. 2016/
0377417; U.S. Patent Application Publication No. 2017/
0010141; U.S. Patent Application Publication No. 2017/
0010328; U.S. Patent Application Publication No. 2017/
0010780; U.S. Patent Application Publication No. 2017/
0016714; U.S. Patent Application Publication No. 2017/
0018094; U.S. Patent Application Publication No. 2017/
0046603; U.S. Patent Application Publication No. 2017/
0047864; U.S. Patent Application Publication No. 2017/
0053146; U.S. Patent Application Publication No. 2017/
0053147; U.S. Patent Application Publication No. 2017/
0053647; U.S. Patent Application Publication No. 2017/
0055606; U.S. Patent Application Publication No. 2017/
0060316; U.S. Patent Application Publication No. 2017/
0061961; U.S. Patent Application Publication No. 2017/
0064634; U.S. Patent Application Publication No. 2017/
0083730; U.S. Patent Application Publication No. 2017/
0091502; U.S. Patent Application Publication No. 2017/
0091706; U.S. Patent Application Publication No. 2017/
0091741; U.S. Patent Application Publication No. 2017/
0091904; U.S. Patent Application Publication No. 2017/
0092908; U.S. Patent Application Publication No. 2017/
0094238; U.S. Patent Application Publication No. 2017/
0098947; U.S. Patent Application Publication No. 2017/
0100949; U.S. Patent Application Publication No. 2017/
0108838; U.S. Patent Application Publication No. 2017/
0108895; U.S. Patent Application Publication No. 2017/
0118355; U.S. Patent Application Publication No. 2017/
0123598; U.S. Patent Application Publication No. 2017/
0124369; U.S. Patent Application Publication No. 2017/
0124396; U.S. Patent Application Publication No. 2017/
0124687; U.S. Patent Application Publication No. 2017/
0126873; U.S. Patent Application Publication No. 2017/
0126904; U.S. Patent Application Publication No. 2017/
0139012; U.S. Patent Application Publication No. 2017/
0140329; U.S. Patent Application Publication No. 2017/
0140731; U.S. Patent Application Publication No. 2017/
0147847; U.S. Patent Application Publication No. 2017/
0150124; U.S. Patent Application Publication No. 2017/
0169198; U.S. Patent Application Publication No. 2017/
0171035; U.S. Patent Application Publication No. 2017/
0171703; U.S. Patent Application Publication No. 2017/
0171803; U.S. Patent Application Publication No. 2017/
0180359; U.S. Patent Application Publication No. 2017/
0180577; U.S. Patent Application Publication No. 2017/
0181299; U.S. Patent Application Publication No. 2017/
0190192; U.S. Patent Application Publication No. 2017/
0193432; U.S. Patent Application Publication No. 2017/
0193461; U.S. Patent Application Publication No. 2017/
0193727; U.S. Patent Application Publication No. 2017/

0199266; U.S. Patent Application Publication No. 2017/0200108; and U.S. Patent Application Publication No. 2017/0200275.

[0044] The following represent Exemplary Embodiments:

[0045] A1. A method of characterizing one or more inventory items to a planogram, the method comprising:

[0046] receiving one or more images using an imaging device, the one or more images comprising a view of a scene including one or more inventory items and an indicia for at least one of the one or more inventory items, each indicia comprising an identification code configured to identify a respective one of the one or more inventory items;

[0047] receiving one or more utterances from a user using a voice recognition system, the one or more utterances comprising a spoken description of at least one of the one or more inventory items;

[0048] identifying at least one of the one or more inventory items in the scene and an identification code corresponding to each of the at least one identified inventory items, wherein the identifying is based at least in part on the one or more images and at least in part on the one or more utterances;

[0049] identifying a plurality of attributes corresponding to the at least one of the one or more inventory items, the plurality of attributes identified based at least in part on the one or more images and at least in part on the one or more utterances; and

[0050] characterizing the one or more inventory items to a planogram based at least in part on the respective identification code and the respective plurality of attributes.

[0051] A2. The method of A1, wherein the one or more images comprising the view of the scene comprises one or more of:

[0052] a location corresponding to at least one of the one or more inventory items in the scene;

[0053] a quantity corresponding to at least one of the one or more inventory items in the scene;

[0054] a facing arrangement corresponding to at least one of the one or more inventory items in the scene;

[0055] a floor layout corresponding to at least one of the one or more inventory items in the scene;

[0056] a fixture attribute corresponding to at least one of the one or more inventory items in the scene; and

[0057] an identification code corresponding to at least one of the one or more inventory items in the scene.

[0058] A3. The method of A1, wherein the one or more utterances comprises one or more of:

[0059] a location corresponding to at least one of the one or more inventory items in the scene;

[0060] a quantity corresponding to at least one of the one or more inventory items in the scene;

[0061] a facing arrangement corresponding to at least one of the one or more inventory items in the scene;

[0062] a floor layout corresponding to at least one of the one or more inventory items in the scene;

[0063] a fixture attribute corresponding to at least one of the one or more inventory items in the scene; and

[0064] an identification code corresponding to at least one of the one or more inventory items.

[0065] A4. The method of A1, wherein the plurality of attributes comprises one or more of:

[0066] a location corresponding to a respective inventory item;

[0067] a quantity corresponding to a respective inventory item;

[0068] a facing arrangement corresponding to a respective inventory item;

[0069] a floor layout corresponding to a respective inventory item; and

[0070] a fixture attribute corresponding to a respective inventory item.

[0071] A5. The method of A1, wherein the planogram comprises:

[0072] a visual representation of the scene, the visual representation based at least in part on the one or more images and at least in part on the one or more utterances;

[0073] a description of the at least one of the one or more inventory items in the scene, the description comprising a visual representation of the inventory item and/or a textual description of the inventory item, wherein the description is based at least in part on the one or more utterances; and

[0074] a description of the plurality of attributes corresponding to the at least one of the one or more inventory items, the description comprising a visual representation of at least some of the attributes and a textural description of at least some of attributes.

[0075] A6. The method of A1, wherein the description of the at least one of the one or more inventory items in the scene comprises an identification code corresponding to at least one of the one or more inventory items in the scene.

[0076] A7. The method of A1, wherein the description of the plurality of attributes corresponding to the at least one of the one or more inventory items comprises a description of one or more of:

[0077] a location corresponding to at least one of the one or more inventory items in the scene, the description of the location comprising a visual representation of the location and/or a textual description of the location;

[0078] a quantity corresponding to at least one of the one or more inventory items in the scene, the description of the quantity comprising a visual representation of the quantity and/or a textual description of the quantity;

[0079] a facing arrangement corresponding to at least one of the one or more inventory items in the scene, the description of the facing arrangement comprising a visual representation of the facing arrangement and/or a textual description of the facing arrangement;

[0080] a floor layout corresponding to at least one of the one or more inventory items in the scene, the description of the layout comprising a visual representation of the layout and/or a textual description of the layout; and

[0081] a fixture attribute corresponding to at least one of the one or more inventory items in the scene, the description of the fixture attributes comprising a visual representation of the fixture attribute and/or a textual description of the fixture attribute.

[0082] A8. The method of A1, comprising identifying a first inventory item based at least in part on the one or more images and at least in part on the one or more utterances.

[0083] A9. The method of A1, comprising identifying a first inventory item based at least in part on the one or more images and identifying a second inventory item based at least in part on the one or more utterances.

[0084] A10. The method of A1, comprising identifying a first inventory item based at least in part on the one or more

images and identifying an identification code corresponding to the first inventory item based at least in part on the one or more utterances.

[0085] A11. The method of A1, comprising identifying a first inventory item based at least in part on the one or more utterances and identifying an identification code corresponding to the first inventory item based at least in part on the one or more images.

[0086] A12. The method of A1, comprising identifying a first inventory item based at least in part on the one or more images and at least in part on the one or more utterances, and identifying an identification code corresponding to the first inventory item based at least in part on the one or more images and at least in part on the one or more utterances.

[0087] A13. The method of A1, wherein the identification code comprises a shelf identification code.

[0088] A14. The method of A1, wherein the identification code comprises an SKU code.

[0089] A15. The method of A1, wherein the one or more utterances comprise a spoken name for an inventory item.

[0090] A16. The method of A1, wherein the one or more utterances comprise a spoken identification code corresponding to an inventory item.

[0091] A17. The method of A1, wherein the one or more utterances comprise a spoken description of one or more of the plurality of attributes.

[0092] A18. The method of A17, wherein the spoken description of the one or more of the plurality of attributes comprises one or more of:

[0093] a spoken description of a location corresponding to a respective inventory item;

[0094] a spoken description of a quantity corresponding to a respective inventory item;

[0095] a spoken description of a facing arrangement corresponding to a respective inventory item;

[0096] a spoken description of a floor layout corresponding to a respective inventory item; and

[0097] a spoken description of a fixture attribute corresponding to a respective inventory item.

[0098] B19. A method of characterizing one or more inventory items to a planogram, the method comprising:

[0099] receiving one or more images using an imaging device, the one or more images comprising a view of a scene including one or more inventory items and one or more of:

[0100] an indicia for at least one of the one or more inventory items, each indicia comprising an identification code configured to identify a respective one of the one or more inventory items;

[0101] a location corresponding to at least one of the one or more inventory items in the scene;

[0102] a quantity corresponding to at least one of the one or more inventory items in the scene;

[0103] a facing arrangement corresponding to at least one of the one or more inventory items in the scene;

[0104] a floor layout corresponding to at least one of the one or more inventory items in the scene; and

[0105] a fixture attribute corresponding to at least one of the one or more inventory items in the scene;

[0106] receiving one or more utterances from a user using a voice recognition system, the one or more utterances comprising a spoken description of one or more of:

[0107] at least one of the one or more inventory items;

[0108] a location corresponding to at least one of the one or more inventory items in the scene;

[0109] a quantity corresponding to at least one of the one or more inventory items in the scene;

[0110] a facing arrangement corresponding to at least one of the one or more inventory items in the scene;

[0111] a floor layout corresponding to at least one of the one or more inventory items in the scene;

[0112] a fixture attribute corresponding to at least one of the one or more inventory items in the scene; and

[0113] an identification code corresponding to at least one of the one or more inventory items;

[0114] identifying at least one of the one or more inventory items in the scene based at least in part on the one or more images and at least in part on the one or more utterances;

[0115] identifying a plurality of attributes corresponding to the at least one of the one or more inventory items, the plurality of attributes identified based at least in part on the one or more images and at least in part on the one or more utterances, wherein the plurality of attributes comprises one or more of:

[0116] a location corresponding to a respective inventory item;

[0117] a quantity corresponding to a respective inventory item;

[0118] a facing arrangement corresponding to a respective inventory item;

[0119] a floor layout corresponding to a respective inventory item; and

[0120] a fixture attribute corresponding to a respective inventory item; and

[0121] characterizing the one or more inventory items to a planogram based at least in part on the respective identification code and the respective plurality of attributes, the planogram comprising:

[0122] a visual representation of the scene, the visual representation based at least in part on the one or more images and at least in part on the one or more utterances;

[0123] a description of the at least one of the one or more inventory items in the scene and of the corresponding identification codes, the description comprising a visual representation of the inventory item and/or a textual description of the inventory item, wherein the description is based at least in part on the one or more utterances; and

[0124] a description of placement of the at least one of the one or more inventory items in the scene, the placement being in respect of one or more of the following attributes respectively corresponding to the at least one of the one or more inventory items:

[0125] a location corresponding to at least one of the one or more inventory items in the scene, the description of the location comprising a visual representation of the location and/or a textual description of the location;

[0126] a quantity corresponding to at least one of the one or more inventory items in the scene, the description of the quantity comprising a visual representation of the quantity and/or a textual description of the quantity;

[0127] a facing arrangement corresponding to at least one of the one or more inventory items in the scene, the description of the facing arrangement comprising

a visual representation of the facing arrangement and/or a textual description of the facing arrangement;

[0128] a floor layout corresponding to at least one of the one or more inventory items in the scene, the description of the layout comprising a visual representation of the layout and/or a textual description of the layout; and

[0129] a fixture attribute corresponding to at least one of the one or more inventory items in the scene, the description of the fixture attributes comprising a visual representation of the fixture attribute and/or a textual description of the fixture attribute.

[0130] B20. The method of B19, further comprising identifying an identification code corresponding to at least one of the one or more inventory items based at least in part on the one or more images and at least in part on the one or more utterances.

[0131] B21. The method of B19, further comprising initiating the method at least in part by providing a prompt configured to instruct the user to characterize the one or more inventory items.

[0132] B22. The method of B21, wherein the prompt comprises an audible prompt, the audible prompt comprising an identification of at least one inventory item.

[0133] B23. The method of B19, further comprising providing a prompt configured to instruct the user to characterize the one or more inventory items upon identifying at least one inventory item in the scene based at least in part on the one or more images.

[0134] B24. The method of B19, further comprising capturing the one or more images using the imaging device upon receiving the one or more utterances from the user using the voice recognition system.

[0135] B25. The method of B19, further comprising receiving coordinates corresponding to one or more of:

[0136] the location for at least one of the one or more inventory items;

[0137] the facing arrangement for at least one of the one or more inventory items; and

[0138] the floor layout for at least one of the one or more inventory items.

[0139] B26. The method of B25, wherein the coordinates comprise geoposition coordinates.

[0140] B27. The method of B25, wherein the coordinates are generated using a Wi-Fi positioning system.

[0141] B28. The method of B25, wherein the coordinates are generated using the one or more images comprising the view of the scene.

[0142] B29. The method of B19, wherein identifying the one or more inventory items in the scene comprises:

[0143] identifying the one or more indicia in the one or more images comprising the view of the scene;

[0144] decoding the one or more indicia to obtain the corresponding one or more identification codes; and

[0145] searching a database to identify the respective one or more inventory items corresponding to the one or more identification codes.

[0146] B30. The method of B19, wherein identifying the quantity comprises identifying a current quantity and/or a stocking quantity based at least in part on the one or more images.

[0147] B31. The method of B19, wherein identifying the quantity comprises identifying a current quantity and/or a stocking quantity based at least in part on the one or more utterances.

[0148] B32. The method of B19, further comprising generating the planogram in a two-dimensional graphic corresponding to the view of the scene and/or in a three-dimensional graphic corresponding to the view of the scene.

[0149] B33. The method of B19, further comprising transposing the one or more images, providing a view of the scene from a different orientation, and wherein the planogram comprising the visual representation corresponds to the different orientation.

[0150] B34. The method of B19, wherein the planogram comprises instructions for positioning the one or more inventory items on the one or more fixture attributes.

[0151] B35. The method of B19, further comprising storing the planogram in a database.

[0152] B36. The method of B19, further comprising storing at least one of the following aspects of information pertaining to the one or more inventory items in one or more nascent database entries:

[0153] the visual representation of the scene;

[0154] the description of the at least one of the one or more inventory items in the scene and of the corresponding identification codes;

[0155] the description of the location corresponding to at least one of the one or more inventory items in the scene;

[0156] the description of the quantity corresponding to at least one of the one or more inventory items in the scene;

[0157] the description of the facing arrangement corresponding to at least one of the one or more inventory items in the scene;

[0158] the description of the floor layout corresponding to at least one of the one or more inventory items in the scene;

[0159] the description of the fixture attribute corresponding to at least one of the one or more inventory items in the scene; and

[0160] the description of the placement of the at least one of the one or more inventory items in the scene in respect of the one or more attributes.

[0161] B37. The method of B19, wherein at least one of the following aspects of information pertaining to the one or more inventory items were unavailable prior to receiving the one or more images and/or prior to receiving the one or more utterances:

[0162] the visual representation of the scene;

[0163] the description of the at least one of the one or more inventory items in the scene and of the corresponding identification codes;

[0164] the description of the location corresponding to at least one of the one or more inventory items in the scene;

[0165] the description of the quantity corresponding to at least one of the one or more inventory items in the scene;

[0166] the description of the facing arrangement corresponding to at least one of the one or more inventory items in the scene;

[0167] the description of the floor layout corresponding to at least one of the one or more inventory items in the scene;

[0168] the description of the fixture attribute corresponding to at least one of the one or more inventory items in the scene; and

[0169] the description of the placement of the at least one of the one or more inventory items in the scene in respect of the one or more attributes.

[0170] B38. The method of B19, wherein the description of the location and/or the description of the quantity corresponding to the at least one of the one or more inventory items in the scene comprises coordinates corresponding to one or more of:

[0171] the location corresponding to the at least one of the one or more inventory items;

[0172] the facing arrangement corresponding to the at least one of the one or more inventory items;

[0173] the floor layout corresponding to the at least one of the one or more inventory items; and

[0174] the fixture attribute corresponding to the at least one of the one or more inventory items.

[0175] B39. The method of B19, wherein the description of the location and/or the quantity corresponding to the at least one of the one or more inventory items comprises a current quantity and/or a stocking quantity.

[0176] B40. The method of B19, wherein the one or more utterances from the user are received contemporaneously with the one or more images from the imaging device.

[0177] B41. The method of B19, wherein the one or more utterances from the user are received separately in time from the one or more images from the imaging device.

[0178] B42. The method of B19, comprising receiving the one or more utterances from a first user operating the voice recognition system, and receiving the one or more images from a second user operating the imaging device.

[0179] B43. The method of B19, wherein the view of the scene comprises a retail environment selected from the group consisting of: a softline retailer; a grocery retailer; a food retailer; a convenience retailer; a hardline retailer; and a specialty retailer.

[0180] B44. The method of B19, wherein the view of the scene comprises a retail environment selected from the group consisting of: a department store; a clothing store; a clothing store; a footwear store; a toiletries store; a cosmetics store; a pharmacy; an office-supply store; a discount outlet; a grocery store; a supermarket; a hypermarket; a convenience store; a big-box store; a restaurant; a fruit stand; a bakery; a coffee shop; a farmer's market; a home-improvement store; a hardware store; a warehouse club; an electronics store; an automobile dealership; an appliance store; a furniture store; a sporting goods store; a lumber yard; a bookstore; an art gallery; a craft store; a music store; a musical instrument store; a boutique; a jewelry store; a gift shop; an arcade; a bazaar; a toy store; a category killer; a chain store; a concept store; a co-operative store; a destination store; a general store; a mall; a kiosk; a pop-up retail store; and a retail market.

[0181] B45. The method of B19, further comprising providing stocking instructions based at least in part on the planogram.

[0182] B46. The method of B19, wherein the planogram characterizes a customized store layout.

[0183] B47. The method of B46, wherein the customized store layout is selected based at least in part on localized customer desires and/or localized demand.

[0184] B48. The method of B19, wherein the planogram incorporates corporate-level business rules and/or best practices pertaining to product placement.

[0185] B49. The method of B19, further comprising:

[0186] obtaining sales data corresponding to at least one of the one or more inventory items, the sales data stored in a database;

[0187] calculating a performance metric corresponding to at least one of the one or more inventory items; and

[0188] characterizing the at least one of the one or more inventory items to the planogram based at least in part on the performance metric, the planogram comprising a modification to one or more of:

[0189] the location corresponding to the at least one of the one or more inventory items in the scene;

[0190] the quantity corresponding to the at least one of the one or more inventory items in the scene;

[0191] the facing arrangement corresponding to the at least one of the one or more inventory items in the scene;

[0192] the floor layout corresponding to the at least one of the one or more inventory items in the scene; and

[0193] the fixture attribute corresponding to the at least one of the one or more inventory items.

[0194] B50. The method of B49, wherein the metric comprises one or more of: sales value; gross margin; profit margin; inventory turn; customer conversion ratio; shelf space; and items per purchase.

[0195] B51. The method of B19, wherein the user captures the one or more images using the imaging device while working in a retail environment in which the one or more inventory items are sold, the working at least in part comprising a task customarily performed by a worker in the retail environment.

[0196] B52. The method of B19, wherein the imaging device comprises a camera and/or a scanner.

[0197] B53. The method of B19, further comprising receiving one or more manual inputs from a hand-operated input device, and wherein the planogram is based at least in part on the one or more manual inputs.

[0198] B54. The method of B19, further comprising providing a workflow to the user while the user is working in a retail environment in which the one or more inventory items are sold, the workflow configured to direct the user to:

[0199] capture the one or more images using the imaging device while working in the retail environment; and/or

[0200] provide the one or more utterances using the voice recognition system;

[0201] wherein the working at least in part comprising a task customarily performed by a worker in the retail environment.

[0202] B55. The method of B54, wherein the workflow comprises a voice directed workflow, the voice directed workflow provided by an audio headset.

[0203] B56. The method of B54, wherein the workflow comprises a visually directed workflow, the visually directed workflow provided on a screen of a mobile device.

[0204] B57. The method of B19, wherein the location corresponding to the at least one of the one or more inventory items in the scene is unavailable from any database resource prior to receiving the one or more images and/or prior to receiving the one or more utterances.

[0205] B58. The method of B54, wherein the workflow is prepared in advance based at least in part on known attributes of the retail environment.

[0206] B59. The method of B54, wherein the workflow is generated in real-time while the user is working in a retail environment in which the one or more inventory items are sold.

[0207] B60. The method of B19, further comprising using the one or more images and/or the one or more utterances to generate a workflow in real-time while the user is working in a retail environment in which the one or more inventory items are sold.

[0208] In the specification and/or figures, typical embodiments of the invention have been disclosed. The present invention is not limited to such exemplary embodiments. The use of the term "and/or" includes any and all combinations of one or more of the associated listed items. The figures are schematic representations and so are not necessarily drawn to scale. Unless otherwise noted, specific terms have been used in a generic and descriptive sense and not for purposes of limitation.

1. A method of characterizing one or more inventory items to a planogram, the method comprising:

receiving one or more images using an imaging device, the one or more images comprising a view of a scene including one or more inventory items and an indicia for at least one of the one or more inventory items, each indicia comprising an identification code configured to identify a respective one of the one or more inventory items;

receiving one or more utterances from a user using a voice recognition system, the one or more utterances comprising a spoken description of at least one of the one or more inventory items;

identifying at least one of the one or more inventory items in the scene and an identification code corresponding to each of the at least one identified inventory items, wherein the identifying is based at least in part on the one or more images and at least in part on the one or more utterances;

identifying a plurality of attributes corresponding to the at least one of the one or more inventory items, the plurality of attributes identified based at least in part on the one or more images and at least in part on the one or more utterances; and

characterizing the one or more inventory items to a planogram based at least in part on the respective identification code and the respective plurality of attributes.

2. The method of claim 1, wherein the one or more images comprising the view of the scene comprises one or more of:

a location corresponding to at least one of the one or more inventory items in the scene;

a quantity corresponding to at least one of the one or more inventory items in the scene;

a facing arrangement corresponding to at least one of the one or more inventory items in the scene;

a floor layout corresponding to at least one of the one or more inventory items in the scene;

a fixture attribute corresponding to at least one of the one or more inventory items in the scene; and

an identification code corresponding to at least one of the one or more inventory items in the scene.

3. The method of claim 1, wherein the one or more utterances comprises one or more of:

a location corresponding to at least one of the one or more inventory items in the scene;

a quantity corresponding to at least one of the one or more inventory items in the scene;

a facing arrangement corresponding to at least one of the one or more inventory items in the scene;

a floor layout corresponding to at least one of the one or more inventory items in the scene;

a fixture attribute corresponding to at least one of the one or more inventory items in the scene; and

an identification code corresponding to at least one of the one or more inventory items.

4. The method of claim 1, wherein the plurality of attributes comprises one or more of:

a location corresponding to a respective inventory item;

a quantity corresponding to a respective inventory item;

a facing arrangement corresponding to a respective inventory item;

a floor layout corresponding to a respective inventory item; and

a fixture attribute corresponding to a respective inventory item.

5. The method of claim 1, wherein the planogram comprises:

a visual representation of the scene, the visual representation based at least in part on the one or more images and at least in part on the one or more utterances;

a description of the at least one of the one or more inventory items in the scene, the description comprising a visual representation of the inventory item and/or a textual description of the inventory item, wherein the description is based at least in part on the one or more utterances; and

a description of the plurality of attributes corresponding to the at least one of the one or more inventory items, the description comprising a visual representation of at least some of the attributes and a textural description of at least some of attributes.

6. The method of claim 1, wherein the description of the at least one of the one or more inventory items in the scene comprises an identification code corresponding to at least one of the one or more inventory items in the scene.

7. The method of claim 1, wherein the description of the plurality of attributes corresponding to the at least one of the one or more inventory items comprises a description of one or more of:

a location corresponding to at least one of the one or more inventory items in the scene, the description of the location comprising a visual representation of the location and/or a textual description of the location;

a quantity corresponding to at least one of the one or more inventory items in the scene, the description of the quantity comprising a visual representation of the quantity and/or a textual description of the quantity;

a facing arrangement corresponding to at least one of the one or more inventory items in the scene, the description of the facing arrangement comprising a visual representation of the facing arrangement and/or a textual description of the facing arrangement;

a floor layout corresponding to at least one of the one or more inventory items in the scene, the description of the layout comprising a visual representation of the layout and/or a textual description of the layout; and

a fixture attribute corresponding to at least one of the one or more inventory items in the scene, the description of

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the fixture attributes comprising a visual representation of the fixture attribute and/or a textual description of the fixture attribute.

8. The method of claim **1**, comprising identifying a first inventory item based at least in part on the one or more images and at least in part on the one or more utterances.

9. The method of claim **1**, comprising identifying a first inventory item based at least in part on the one or more images and identifying a second inventory item based at least in part on the one or more utterances.

10. The method of claim **1**, comprising identifying a first inventory item based at least in part on the one or more images and identifying an identification code corresponding to the first inventory item based at least in part on the one or more utterances.

11. A method of characterizing one or more inventory items to a planogram, the method comprising:

receiving one or more images using an imaging device, the one or more images comprising a view of a scene including one or more inventory items and one or more of:

an indicia for at least one of the one or more inventory items, each indicia comprising an identification code configured to identify a respective one of the one or more inventory items;

a location corresponding to at least one of the one or more inventory items in the scene;

a quantity corresponding to at least one of the one or more inventory items in the scene;

a facing arrangement corresponding to at least one of the one or more inventory items in the scene;

a floor layout corresponding to at least one of the one or more inventory items in the scene; and

a fixture attribute corresponding to at least one of the one or more inventory items in the scene;

receiving one or more utterances from a user using a voice recognition system, the one or more utterances comprising a spoken description of one or more of:

at least one of the one or more inventory items;

a location corresponding to at least one of the one or more inventory items in the scene;

a quantity corresponding to at least one of the one or more inventory items in the scene;

a facing arrangement corresponding to at least one of the one or more inventory items in the scene;

a floor layout corresponding to at least one of the one or more inventory items in the scene;

a fixture attribute corresponding to at least one of the one or more inventory items in the scene; and

an identification code corresponding to at least one of the one or more inventory items;

identifying at least one of the one or more inventory items in the scene based at least in part on the one or more images and at least in part on the one or more utterances;

identifying a plurality of attributes corresponding to the at least one of the one or more inventory items, the plurality of attributes identified based at least in part on the one or more images and at least in part on the one or more utterances, wherein the plurality of attributes comprises one or more of:

a location corresponding to a respective inventory item;

a quantity corresponding to a respective inventory item;

a facing arrangement corresponding to a respective inventory item;

a floor layout corresponding to a respective inventory item; and

a fixture attribute corresponding to a respective inventory item; and

characterizing the one or more inventory items to a planogram based at least in part on the respective identification code and the respective plurality of attributes, the planogram comprising:

a visual representation of the scene, the visual representation based at least in part on the one or more images and at least in part on the one or more utterances;

a description of the at least one of the one or more inventory items in the scene and of the corresponding identification codes, the description comprising a visual representation of the inventory item and/or a textual description of the inventory item, wherein the description is based at least in part on the one or more utterances; and

a description of placement of the at least one of the one or more inventory items in the scene, the placement being in respect of one or more of the following attributes respectively corresponding to the at least one of the one or more inventory items:

a location corresponding to at least one of the one or more inventory items in the scene, the description of the location comprising a visual representation of the location and/or a textual description of the location;

a quantity corresponding to at least one of the one or more inventory items in the scene, the description of the quantity comprising a visual representation of the quantity and/or a textual description of the quantity;

a facing arrangement corresponding to at least one of the one or more inventory items in the scene, the description of the facing arrangement comprising a visual representation of the facing arrangement and/or a textual description of the facing arrangement;

a floor layout corresponding to at least one of the one or more inventory items in the scene, the description of the layout comprising a visual representation of the layout and/or a textual description of the layout; and

a fixture attribute corresponding to at least one of the one or more inventory items in the scene, the description of the fixture attributes comprising a visual representation of the fixture attribute and/or a textual description of the fixture attribute.

12. The method of claim **11**, further comprising identifying an identification code corresponding to at least one of the one or more inventory items based at least in part on the one or more images and at least in part on the one or more utterances.

13. The method of claim **11**, further comprising initiating the method at least in part by providing a prompt configured to instruct the user to characterize the one or more inventory items.

14. The method of claim **13**, wherein the prompt comprises an audible prompt, the audible prompt comprising an identification of at least one inventory item.

15. The method of claim **11**, further comprising providing a prompt configured to instruct the user to characterize the one or more inventory items upon identifying at least one inventory item in the scene based at least in part on the one or more images.

16. The method of claim **11**, further comprising capturing the one or more images using the imaging device upon receiving the one or more utterances from the user using the voice recognition system.

17. The method of claim **11**, further comprising receiving coordinates corresponding to one or more of:

the location for at least one of the one or more inventory items;

the facing arrangement for at least one of the one or more inventory items; and

the floor layout for at least one of the one or more inventory items.

18. The method of claim **17**, wherein the coordinates comprise geoposition coordinates.

19. The method of claim **17**, wherein the coordinates are generated using a Wi-Fi positioning system.

20. The method of claim **17**, wherein the coordinates are generated using the one or more images comprising the view of the scene.

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