devices, or work locations. For instance, when a specific language is configured for a tool control storage device, a group of tool control storage devices, or a work location, that tool control storage device and all tool control storage devices in the group or the work location will present text strings, audio files, and video files only from that the directory associated with the specific language. However, if an employee's preferred language is different from the specific language set as the default language configured for the tool control storage device, this may create miscommunications and errors that will negatively impact the maintenance of safety standards. With the ease of individuals moving from a country to another, a group of the automated tool control system may include users of various ethnicities and native languages. Thus, configuring tool control storage device with a specific language per device, a group of users, or work locations may create issues where one or more employees accessing the tool control storage device may not be fluent in the specific language the tool control storage device is configured to. Because of the language barrier, important information may not be fully understood by the employees whose preferred language is different from the default language presented on the tool control storage device.

[0006] Some tool control storage devices require language and other parameters be configured prior to their use. For example, when a system administrator remotely reconfigures the default language for a tool control storage device, a tool control storage device, a group of tool control storage devices, or a work location, the power to the tool control storage device or tool control storage devices in the group or the work location must be cycled off and on to complete the reconfiguration of the default language.

[0007] Accordingly, there is a need for an improved system that enables the tool control storage devices to seamlessly reconfigure to accommodate employees' individual needs.

Summary

[0007a] In a first aspect, the present disclosure provides an automated inventory control system comprising: a storage device including a plurality of storage locations for storing objects; an access control device configured to receive user credentials for access to the storage device; a data storage configured to store configurable parameters associated with the storage device in a plurality of languages, and information corresponding to respective users of the storage device including an assigned language and an assigned unit of measurement; wherein, in response to the access control device receiving user credentials from a user by the access control device, the storage device is configured to obtain

configurable parameters from the data storage in the assigned unit of measurement of the information corresponding to the user.

[0007b] In a second aspect, the present disclosure provides a method for an automated inventory control system, comprising the steps of: storing an object in a storage location of a storage device; assigning a language, of a plurality of languages, to a user of the storage device; storing, in a data storage, configurable parameters associated with the storage device in a plurality of languages, and information corresponding to respective users of the storage device including an assigned language and an assigned unit of measurement; receiving, with an access control device, user credentials for access to the storage device; in response to receiving user credentials of the user, obtaining configurable parameters from the data storage in the assigned unit of measurement of the information corresponding to the user.

[0007c] In a third aspect, the present disclosure provides a non-transitory computer-readable medium storing executable instructions for carrying out a process comprising the steps of: associating a language, of a plurality of languages, to a user of a storage device; storing, to a data storage, configurable parameters associated with the storage device in a plurality of languages, and information corresponding to respective users of the storage device including an assigned language and an assigned unit of measurement; receiving, from an access control device, user credentials for access to the storage device; in response to receiving user credentials of the user, obtaining configurable parameters from the data storage in the assigned unit of measurement of the information corresponding to the user.

Brief Description of Drawings

[0007d] FIG. 1 illustrates an exemplary automated tool control system according to example aspects of the subject technology.

[0007e] Figures 2A and 2B illustrate various exemplary tool control storage devices.

[0007f] FIG. 3A shows a detailed view of one drawer of the tool control storage device in an open position.

[0007g] FIG. 3B shows a perspective view of an imaging subsystem in tool control storage device according to an embodiment.

[0007h] FIG. 4 shows a flowchart illustrating an example process for automatically configuring a tool control storage device 106 according to exemplary aspects of the subject technology.

[0007i] FIG. 5 conceptually illustrates an exemplary electronic system with which some implementations of the subject technology can be implemented.

Description

[0008] In the following detailed description, numerous specific details are set forth by way of examples in order to provide a thorough understanding of the relevant teachings. However, it should be apparent to those skilled in the art that the present teachings may be practiced without such details. In other instances, well known methods, procedures, components, and/or circuitry have been described at a relatively high-level, without detail, in order to avoid unnecessarily obscuring aspects of the present teachings.

[0009] To address the issues described in the Background, automated tool control systems have been developed which automatically reconfigure a tool control storage device

CLAIMS

1. An automated inventory control system comprising:

a storage device including a plurality of storage locations for storing objects;

an access control device configured to receive user credentials for access to the storage device;

a data storage configured to store configurable parameters associated with the storage device in a plurality of languages, and information corresponding to respective users of the storage device including an assigned language and an assigned unit of measurement;

wherein, in response to the access control device receiving user credentials from a user by the access control device, the storage device is configured to obtain configurable parameters from the data storage in the assigned unit of measurement of the information corresponding to the user.

2. The automated inventory control system of claim 1, wherein the configurable parameters from the data storage are in the assigned language corresponding to the user.

3. The automated inventory control system of claim 1, wherein the configurable parameters include text files, audio files, and video files in a plurality of languages.

4. The automated inventory control system of claim 1, further comprising:

a display associated with the storage device,

wherein the configurable parameters includes display information comprising one or more of: work instructions, tool selection, safety guidelines, torque settings, system and tool status alerts, or warnings, and

wherein, after the access control device receives user credentials from the user, the storage device is configured to display the display information in the assigned language corresponding to the user.

5. The automated inventory control system of claim 1, wherein the access control device includes one or more of: an RFID proximity sensor, a magstripe card scanner, a barcode scanner, a camera, or a biometric sensor.

6. The automated inventory control system of claim 2, wherein the data storage stores text strings, audio files, and video files in a plurality of language directories each associated with a different language.

7. The automated inventory control system of claim 1,

wherein the storage device is further configured to obtain configurable parameters from the data storage based on one or more of: a work order associated with the user, one or more tools associated with the work order or with the user, or a second user associated with the user.

8. The automated inventory control system of claim 1, the storage device is one of a tool locker, a tool crib, or a secure storage device.

9. The automated inventory control system of claim 1, further comprising one or more sensing systems configured to detect presence or absence of the objects.

10. The automated inventory control system of claim 9, wherein the one or more sensing systems includes one or more of:

one or more cameras configured to obtain images of the plurality of storage locations,

one or more RF sensors configured to detect RFID tags,

one or more electrical connections configured to connect to respective objects,

one or more scales configured to detect weights of respective objects,

an array of contact sensors configured to detect a shape of an object,

one or more ultrasonic sensors, each comprising an emitter configured to emit sound waves and a detector configured to detect sound waves, or

one or more magnetic inductive sensors configured to detect metallic objects.

11. The automated inventory control system of claim 1, further comprising:

one or more network connections configured to connect the data storage to the storage device and one or more other storage devices,

wherein the data storage is physically remote from one or more of the storage device

and the one or more other storage devices, and

wherein the data storage is configured to transmit the configurable parameters in the assigned language corresponding to the user to each of the storage device and the one or more other storage devices.

12. A method for an automated inventory control system, comprising the steps of:

storing an object in a storage location of a storage device;

assigning a language, of a plurality of languages, to a user of the storage device;

storing, in a data storage, configurable parameters associated with the storage device in a plurality of languages, and information corresponding to respective users of the storage device including an assigned language and an assigned unit of measurement;

receiving, with an access control device, user credentials for access to the storage device;

in response to receiving user credentials of the user, obtaining configurable parameters from the data storage in the assigned unit of measurement of the information corresponding to the user.

13. The method of claim 12, wherein the configurable parameters from the data storage are in the assigned language corresponding to the user.

14. The method of claim 12, further comprising the step of:

displaying, on a display associated with the storage device, display information in the assigned language corresponding to the user,

wherein the display information comprises one or more of: work instructions, tool selection, safety guidelines, torque settings, system and tool status alerts, or warnings.

15. The method of claim 12, further comprising the step of:

receiving, at the storage device, information reflecting one or more of: a work order associated with the user, one or more tools associated with the work order or with the user, or a second user associated with the user, and

obtaining configurable parameters from the data storage based on received information.

16. A non-transitory computer-readable medium storing executable instructions for carrying out a process comprising the steps of:

associating a language, of a plurality of languages, to a user of a storage device;

storing, to a data storage, configurable parameters associated with the storage device in a plurality of languages, and information corresponding to respective users of the storage device including an assigned language and an assigned unit of measurement;

receiving, from an access control device, user credentials for access to the storage device;

in response to receiving user credentials of the user, obtaining configurable parameters from the data storage in the assigned unit of measurement of the information corresponding to the user.

17. The non-transitory computer-readable medium of claim 16, wherein the configurable parameters from the data storage are in the assigned language corresponding to the user.

18. The non-transitory computer-readable medium of claim 16, the process further comprising the step of:

in response to receiving user credentials of the user, configuring the storage device to display text strings, audio files, and video files, stored in the storage device, according to a language directory associated with the assigned language of the user.