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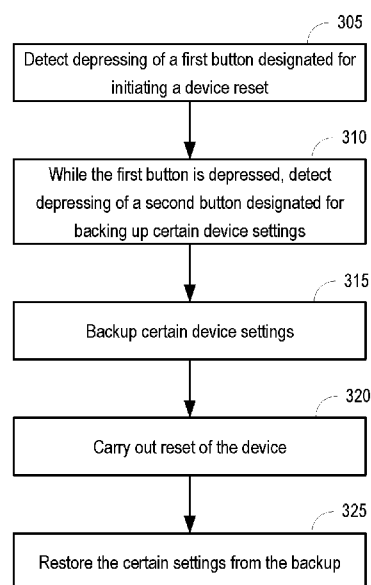


FIG. 3

(57) **Abstract:** Methods, systems, and computer readable media can be operable to facilitate a device reset supporting a backup and restore of certain settings. A device may recognize a request to carry out a reset of the device, wherein one or more certain device settings are backed up prior to the reset and restored following the reset. The request may be recognized as a depressing of a reset button and, while the reset button is depressed, a depressing of a button that is designated for backing up and restoring the one or more certain device settings. The request may be recognized as a request that is received through a GUI. The one or more certain device settings may be determined based upon a default selection, or the one or more certain device settings may be selected by a user.

DEVICE RESET FUNCTION SUPPORTING BACKUP AND RESTORE OF CERTAIN SETTINGS

TECHNICAL FIELD

[0001] This disclosure relates to a device reset function supporting backup and restore of certain settings.

BACKGROUND

[0002] When an end user encounters an issue such as an Internet connection issue at a CPE (customer premise equipment) device (e.g., wireless gateway, modem, router, etc.), the end user may attempt to resolve the issue by rebooting or power cycling the CPE device. Where a rebooting or power cycling does not resolve the issue, the end user may carry out a factory default reset of the device.

[0003] However, during a factory default reset of the CPE device, certain settings associated with the CPE device, such as LAN (local area network) GUI (graphical user interface) login password, Wi-Fi SSID (service set identifier) name/password, parental control rules, MAC (media access control) filter list, and/or other settings, may be removed from storage and/or lost. Following the factory default reset of the CPE device, the user would need to reconfigure the CPE device by re-establishing the certain settings through a LAN GUI.

[0004] Therefore, a need exists for improving methods and systems for initiating and carrying out a reset of a CPE device.

BRIEF DESCRIPTION OF THE DRAWINGS

[0005] FIG. 1 is a block diagram illustrating an example network environment operable to facilitate a device reset supporting a backup and restore of certain settings.

[0006] FIG. 2 is a block diagram illustrating an example CPE device operable to facilitate a device reset supporting a backup and restore of certain settings.

[0007] FIG. 3 is a flowchart illustrating an example process operable to facilitate a device reset supporting a backing up and restoring of certain settings.

[0008] FIG. 4 is a flowchart illustrating an example process operable to facilitate a device reset supporting a backing up and restoring of certain settings based upon a detection of a depressing of a second button during a continuous depressing of a first button.

[0009] FIG. 5 is a flowchart illustrating an example process operable to facilitate a device reset supporting a backing up and restoring of certain settings based upon an option selected within a display window.

[0010] FIG. 6 is a flowchart illustrating an example process operable to facilitate a device reset supporting a backing up and restoring of certain settings based upon an option selected within a display window, wherein the certain settings are selected for retention through a user interface.

[0011] FIG. 7 is a block diagram of a hardware configuration operable to facilitate a device reset supporting a backup and restore of certain settings.

[0012] Like reference numbers and designations in the various drawings indicate like elements.

DETAILED DESCRIPTION

[0013] It is desirable to improve upon methods and systems for initiating and carrying out a reset of a CPE device. Methods, systems, and computer readable media can be operable to facilitate a device reset supporting a backup and restore of certain settings. A device may

recognize a request to carry out a reset of the device, wherein one or more certain device settings are backed up prior to the reset and restored following the reset. The request may be recognized as a depressing of a reset button and, while the reset button is depressed, a depressing of a button that is designated for backing up and restoring the one or more certain device settings. The request may be recognized as a request that is received through a GUI. The request may be recognized as a request that is received through a CLI (command line interface) command. The one or more certain device settings may be determined based upon a default selection, or the one or more certain device settings may be selected by a user.

[0014] FIG. 1 is a block diagram illustrating an example network environment 100 operable to facilitate a device reset supporting a backup and restore of certain settings. In embodiments, a customer premise equipment (CPE) device 105 may receive and/or deliver one or more services (e.g., video, data, voice, security, and/or other service(s)) to a subscriber. The CPE device 105 may include a set-top box (STB), multimedia gateway device, modem, router, wireless extender, and/or any other device configured to receive and/or deliver a service to a subscriber.

[0015] In embodiments, the CPE device 105 may receive the one or more services and may transmit and receive other communications to and from one or more upstream network components through an access network 110 and a wide-area network (WAN) 115. The access network 110 may include any of a variety of communication links between the CPE device 105 and a WAN 115, such as a hybrid-fiber coaxial (HFC) network, phone line(s) connected to a digital subscriber line access multiplexer (DSLAM), wireless communication network, and others.

[0016] In embodiments, the CPE device 105 may include one or more user interfaces through which a user may request or initiate a reset of the CPE device 105. For example, the CPE device 105 may include a first physical button (e.g., a reset button) that is designated for initiating a reset of the CPE device 105. The CPE device 105 may be configured to carry out a factory default reset in response to the first physical button being depressed for at least a certain duration (e.g., five (5) seconds, ten (10) seconds, etc.). As another example, the CPE device 105 may generate and output a GUI (graphical user interface) through which a user may request or initiate a reset of the CPE device 105. As yet another example, the CPE device 105 may receive a request for initiation of a reset of the CPE device 105 through a CLI (command line interface) command.

[0017] In embodiments, a factory default reset of a CPE device 105 may include a removal of one or more files from storage associated with the CPE device 105, thereby returning original or default settings to the CPE device 105. For example, a factory default reset of the CPE device 105 may include a removal of one or more files that include LAN (local area network) GUI login password, Wi-Fi SSID (service set identifier) name/password, parental control rules/policies, MAC (media access control) filter list, fixed DHCP (dynamic host configuration protocol) list, and/or other settings.

[0018] In embodiments, the CPE device 105 may include one or more other physical buttons (e.g., one or more physical buttons other than the first physical button that is designated for initiating a reset of the CPE device 105). The one or more other physical buttons may have various designations for initiating a variety of actions. One or more of the other physical buttons may be designated as a backup and restore button, the backup and restore button being

designated for backing up and restoring certain settings when depressed at the same time that the first physical button (e.g., the first physical button that is designated for initiating a reset of the CPE device 105) is depressed. For example, the CPE device 105 may include a WPS (Wi-Fi protected setup) button, and the WPS button may be designated for initiating a WPS operation when depressed while also being designated for backing up and restoring certain settings when depressed at the same time as the first physical button. It should be understood that a variety of other physical buttons of the CPE device 105 may be designated for backing up and restoring certain settings when depressed at the same time as the first physical button. When the backup and restore button is depressed while the reset button is depressed, the CPE device 105 may initiate a backup and restore reset of the CPE device 105. In embodiments, a request to initiate a backup and restore reset of the CPE device 105 may be recognized as a request that is received through a CLI (command line interface) command.

[0019] In embodiments, the certain settings that are to be backed up and restored when a backup and restore reset of the CPE device 105 is initiated may include one or more settings that are established as settings to be backed up and restored by default (e.g., user settings such as private SSID name/password may be hard-coded), or the certain settings may include one or more settings that are selected by a user to be backed up and restored when a backup and restore reset of the CPE device 105 is initiated. The CPE device 105 may generate and output a GUI that provides a user with a list of selectable identifiers associated with one or more settings that may be designated as a certain setting that is to be backed up and restored when a backup and restore reset of the CPE device 105 is initiated. For example, the GUI may include a checkbox along with each setting identifier, wherein the checkbox may be checked or unchecked to

indicate whether or not the corresponding setting will be backed up and restored during a backup and restore reset of the device.

[0020] In embodiments, a user may login to a LAN GUI to initiate a factory default reset of the CPE device 105. When a user initiates a factory default reset through the LAN GUI, the CPE device 105 may generate and output a display window that prompts the user to choose whether to backup certain settings before the reset of the device. The certain settings to be backed up may be presented to the user through the GUI, and the GUI may provide the user with an option to select the one or more settings that are to be backed up.

[0021] FIG. 2 is a block diagram illustrating an example CPE device 105 operable to facilitate a device reset supporting a backup and restore of certain settings. The CPE device 105 may be a STB, multimedia gateway device, modem, router, wireless extender, and/or any other device configured to receive and/or deliver a service to a subscriber. In embodiments, the CPE device 105 may include a user interface 205, a device reset module 210, and a device settings data store 215.

[0022] In embodiments, the user interface 205 may include a first physical button (e.g., a reset button) that is designated for initiating a reset of the CPE device 105. The device reset module 210 may be configured to carry out a factory default reset in response to the first physical button being depressed for at least a certain duration (e.g., five (5) seconds, ten (10) seconds, etc.). As another example, the device reset module 210 may generate and output a GUI (graphical user interface) via the user interface 205, through which a user may request or initiate a reset of the CPE device 105.

[0023] In embodiments, a factory default reset of a CPE device 105 may include a removal of one or more files from storage associated with the CPE device 105, thereby returning original or default settings to the CPE device 105. For example, a factory default reset of the CPE device 105 may include a removal of one or more files that include LAN (local area network) GUI login password, Wi-Fi SSID (service set identifier) name/password, parental control rules/policies, MAC (media access control) filter list, fixed DHCP (dynamic host configuration protocol) list, and/or other settings.

[0024] In embodiments, the user interface 205 may include one or more other physical buttons (e.g., one or more physical buttons other than the first physical button that is designated for initiating a reset of the CPE device 105). The one or more other physical buttons may have various designations for initiating a variety of actions. One or more of the other physical buttons may be designated as a backup and restore button, the backup and restore button being designated for backing up and restoring certain settings when depressed at the same time that the first physical button (e.g., the first physical button that is designated for initiating a reset of the CPE device 105) is depressed. For example, the user interface 205 may include a WPS (Wi-Fi protected setup) button, and the WPS button may be designated for backing up and restoring certain settings when depressed at the same time as the first physical button. It should be understood that a variety of other physical buttons of the user interface 205 may be designated for backing up and restoring certain settings when depressed at the same time as the first physical button. When the backup and restore button is depressed while the reset button is depressed, the device reset module 210 may initiate a backup and restore reset of the CPE device 105.

[0025] In embodiments, the certain settings that are to be backed up and restored when a backup and restore reset of the CPE device 105 is initiated may include one or more settings that are established as settings to be backed up and restored by default (e.g., user settings such as private SSID name/password may be hard-coded), or the certain settings may include one or more settings that are selected by a user to be backed up and restored when a backup and restore reset of the CPE device 105 is initiated. The device reset module 210 may generate and output a GUI that provides a user with a list of selectable identifiers associated with one or more settings that may be designated as a certain setting that is to be backed up and restored when a backup and restore reset of the CPE device 105 is initiated. For example, the GUI may include a checkbox along with each setting identifier, wherein the checkbox may be checked or unchecked to indicate whether or not the corresponding setting will be backed up and restored during a backup and restore reset of the device.

[0026] In embodiments, a user may login to a LAN GUI to initiate a factory default reset of the CPE device 105. When a user initiates a factory default reset through the LAN GUI, the device reset module 210 may generate and output a display window that prompts the user to choose whether to backup certain settings before the reset of the device. The certain settings to be backed up may be presented to the user through the GUI, and the GUI may provide the user with an option to select the one or more settings that are to be backed up.

[0027] In embodiments, when a backup and restore reset of the CPE device 105 is initiated, the device reset module 210 may carry out a reset of the CPE device 105 without removing the certain settings. For example, when a backup and restore reset of the CPE device 105 is initiated, the device reset module 210 may copy the specific settings and store the specific

settings in a new location (e.g., at the device settings data store 215), and the device reset module 210 may carry out a reset of the CPE device 105 without removing the specific settings from the new location. After carrying out the device reset, the device reset module 210 may recover the certain settings from the new location. As another example, when a backup and restore reset of the CPE device 105 is initiated, the device reset module 210 may identify and select each of the certain settings within a storage location (e.g., within the device settings data store 215) and the device reset module 210 may carry out the device reset by only removing the unselected settings, files, or configurations. In embodiments, the device settings data store 215 may be located within RAM (random access memory) of the CPE device 105.

[0028] FIG. 3 is a flowchart illustrating an example process 300 operable to facilitate a device reset supporting a backing up and restoring of certain settings. The process 300 can begin at 305 when a depressing of a first button designated for initiating a device reset is detected. The depressing of the first button may be detected, for example, by a CPE device 105 of FIG. 1 (e.g., by the device reset module 210 of FIG. 2). In embodiments, the device reset module 210 may detect a depressing of a reset button associated with the CPE device 105.

[0029] At 310, while the first button is depressed, a depressing of a second button designated for backing up certain device settings may be detected. The depressing of the second button may be detected, for example, by the CPE device 105 (e.g., by the device reset module 210). In embodiments, the device reset module 210 may detect a depressing of a backup and restore button of the CPE device 105 (e.g., a WPS button of the CPE device 105 may be designated as a backup and restore button).

[0030] At 315, one or more certain device settings may be backed up. For example, the device reset module 210 may backup the one or more certain device settings by copying the certain device settings to a new location (e.g., new file location within RAM such as a device settings data store 215 of FIG. 2) or by selecting the certain device settings for retention during a device reset. In embodiments, the certain device settings may include one or more settings that are designated for retention during a backup and restore reset by default, or the certain device settings may include one or more settings that are designated for retention during a backup and restore reset by a user selection of the settings.

[0031] At 320, a reset of the device may be carried out. The reset of the device may be carried out, for example, by the device reset module 210. In embodiments, the device reset module 210 may carry out a backup and restore reset of the CPE device 105, wherein one or more certain settings are not removed from storage associated with the CPE device 105 during the reset.

[0032] At 325, the certain settings may be restored from the backup. The certain settings may be restored, for example, by the device reset module 210. In embodiments, the device reset module 210 may recover and restore a backup or copy of certain settings that was created prior to the reset of the device (e.g., the backup or copy of the certain settings created at 315). For example, the device reset module 210 may recover the backup or copy of the certain settings from device storage (e.g., RAM such as the device settings data store 215). In embodiments, where the certain settings were not moved to a new location prior to the device reset and the certain settings were not removed during the device reset, the device reset module 210 may restore the certain settings after the device reset is carried out.

[0033] FIG. 4 is a flowchart illustrating an example process 400 operable to facilitate a device reset supporting a backing up and restoring of certain settings based upon a detection of a depressing of a second button during a continuous depressing of a first button. The process 400 can begin at 405 when a depressing of a first button designated for initiating a device reset is detected. The depressing of the first button may be detected, for example, by a CPE device 105 of FIG. 1 (e.g., by the device reset module 210 of FIG. 2). In embodiments, the device reset module 210 may detect a depressing of a reset button associated with the CPE device 105.

[0034] At 410, a continuous depressing of the first button for a certain duration may be detected. The continuous depressing of the first button for the certain duration may be detected, for example, by the CPE device 105 (e.g., by the device reset module 210). In embodiments, the CPE device 105 may detect a continuous depressing of the first button for the certain duration (e.g., five (5) seconds, ten (10) seconds, etc.), and the continuous depressing of the first button for the certain duration may signal the CPE device 105 to initiate a reset (e.g., a factory default reset).

[0035] At 415, a determination may be made whether a depressing of a second button is detected during the continuous depressing of the first button. The determination whether a depressing of a second button is detected during the continuous depressing of the first button may be made, for example, by the CPE device 105 (e.g., by the device reset module 210). While the first button is depressed, and prior to the first button being depressed for the certain duration, the device reset module 210 may detect a depressing of a backup and restore button of the CPE device 105 (e.g., a WPS button of the CPE device 105 may be designated as a backup and restore button). If the device reset module 210 does not detect a depressing of the second button during

the continuous depressing of the first button, a factory default reset of the device (e.g., the CPE device 105) may be carried out at 420. In embodiments, the factory default reset may be initiated by the device reset module 210, and the factory default reset of the CPE device 105 may include a removal of one or more files from storage associated with the CPE device 105, thereby returning original or default settings to the CPE device 105. For example, a factory default reset of the CPE device 105 may include a removal of one or more files that include LAN (local area network) GUI login password, Wi-Fi SSID (service set identifier) name/password, parental control rules/policies, MAC (media access control) filter list, fixed DHCP (dynamic host configuration protocol) list, and/or other settings.

[0036] If, at 415, the determination is made that a depressing of a second button is detected during the continuous depressing of the first button, the process 400 may proceed to 425. At 425, one or more certain device settings may be backed up. For example, the device reset module 210 may backup the one or more certain device settings by copying the certain device settings to a new location (e.g., new file location within RAM such as a device settings data store 215 of FIG. 2) or by selecting the certain device settings for retention during a device reset. In embodiments, the certain device settings may include one or more settings that are designated for retention during a backup and restore reset by default, or the certain device settings may include one or more settings that are designated for retention during a backup and restore reset by a user selection of the settings.

[0037] At 430, a backup and restore reset of the device may be carried out. The backup and restore reset of the device may be carried out, for example, by the device reset module 210. In embodiments, the device reset module 210 may carry out a backup and restore reset of the

CPE device 105, wherein one or more certain settings are not removed from storage associated with the CPE device 105 during the reset.

[0038] At 435, the certain settings may be restored from the backup. The certain settings may be restored, for example, by the device reset module 210. In embodiments, the device reset module 210 may recover and restore a backup or copy of certain settings that was created prior to the reset of the device (e.g., the backup or copy of the certain settings created at 425). For example, the device reset module 210 may recover the backup or copy of the certain settings from device storage (e.g., RAM such as the device settings data store 215). In embodiments, where the certain settings were not moved to a new location prior to the device reset and the certain settings were not removed during the device reset, the device reset module 210 may restore the certain settings after the device reset is carried out.

[0039] FIG. 5 is a flowchart illustrating an example process 500 operable to facilitate a device reset supporting a backing up and restoring of certain settings based upon an option selected within a display window. The process 500 can begin at 505 when a request to carry out a device reset is received. The request to carry out a device reset (e.g., a reset of a CPE device 105 of FIG. 1) may be received, for example, by the CPE device 105 (e.g., by a device reset module 210 of FIG. 2). In embodiments, the request to carry out the device reset may be received through a GUI that is accessed by a user. For example, through the CPE device 105, a user may log in to a LAN GUI and select an option to initiate a reset of the CPE device 105 (e.g., a factory default reset of the CPE device 105).

[0040] At 510, a display window prompting a user to accept or decline an option to backup device settings may be generated and output. The display window may be generated and

output, for example, by the CPE device 105 (e.g., by the device reset module 210). In embodiments, the display window may prompt the user to select between a factory default reset of the CPE device 105 or a backup and restore reset of the CPE device 105. The display window may include an identification of one or more certain device settings that are designated, or that may be designated, for retention during a reset of the CPE device 105.

[0041] At 515, a determination may be made whether the option to backup device settings is accepted. The determination whether the option to backup device settings is accepted may be made, for example, by the CPE device 105 (e.g., by the device reset module 210). If the option to backup device settings is not selected within the display window, a factory default reset of the device (e.g., the CPE device 105) may be carried out at 520. In embodiments, the factory default reset may be initiated by the device reset module 210, and the factory default reset of the CPE device 105 may include a removal of one or more files from storage associated with the CPE device 105, thereby returning original or default settings to the CPE device 105. For example, a factory default reset of the CPE device 105 may include a removal of one or more files that include LAN (local area network) GUI login password, Wi-Fi SSID (service set identifier) name/password, parental control rules/policies, MAC (media access control) filter list, fixed DHCP (dynamic host configuration protocol) list, and/or other settings.

[0042] If, at 515, the determination is made that the option to backup device settings is accepted (i.e., the option backup device settings is selected within the display window), the process 500 may proceed to 525. At 525, one or more certain device settings may be backed up. For example, the device reset module 210 may backup the one or more certain device settings by copying the certain device settings to a new location (e.g., new file location within RAM such as

a device settings data store 215 of FIG. 2) or by selecting the certain device settings for retention during a device reset. In embodiments, the certain device settings may include one or more settings that are designated for retention during a backup and restore reset by default, or the certain device settings may include one or more settings that are designated for retention during a backup and restore reset by a user selection of the settings. For example, the display window may prompt a user to select one or more device settings that are to be backed up prior to a reset of the CPE device 105.

[0043] At 530, a backup and restore reset of the device may be carried out. The backup and restore reset of the device may be carried out, for example, by the device reset module 210. In embodiments, the device reset module 210 may carry out a backup and restore reset of the CPE device 105, wherein one or more certain settings are not removed from storage associated with the CPE device 105 during the reset.

[0044] At 535, the certain settings may be restored from the backup. The certain settings may be restored, for example, by the device reset module 210. In embodiments, the device reset module 210 may recover and restore a backup or copy of certain settings that was created prior to the reset of the device (e.g., the backup or copy of the certain settings created at 525). For example, the device reset module 210 may recover the backup or copy of the certain settings from device storage (e.g., RAM such as the device settings data store 215). In embodiments, where the certain settings were not moved to a new location prior to the device reset and the certain settings were not removed during the device reset, the device reset module 210 may restore the certain settings after the device reset is carried out.

[0045] FIG. 6 is a flowchart illustrating an example process 600 operable to facilitate a device reset supporting a backing up and restoring of certain settings based upon an option selected within a display window, wherein the certain settings are selected for retention through a user interface. The process 600 can begin at 605 when a request to carry out a device reset is received. The request to carry out a device reset (e.g., a reset of a CPE device 105 of FIG. 1) may be received, for example, by the CPE device 105 (e.g., by a device reset module 210 of FIG. 2). In embodiments, the request to carry out the device reset may be received through a GUI that is accessed by a user. For example, through the CPE device 105, a user may log in to a LAN GUI and select an option to initiate a reset of the CPE device 105 (e.g., a factory default reset of the CPE device 105).

[0046] At 610, a display window prompting a user to accept or decline an option to backup device settings may be generated and output. The display window may be generated and output, for example, by the CPE device 105 (e.g., by the device reset module 210). In embodiments, the display window may prompt the user to select between a factory default reset of the CPE device 105 or a backup and restore reset of the CPE device 105. The display window may include an identification of one or more certain device settings that are designated, or that may be designated, for retention during a reset of the CPE device 105.

[0047] At 615, a determination may be made whether the option to backup device settings is accepted. The determination whether the option to backup device settings is accepted may be made, for example, by the CPE device 105 (e.g., by the device reset module 210). If the option to backup device settings is not selected within the display window, a factory default reset of the device (e.g., the CPE device 105) may be carried out at 620. In embodiments, the factory

default reset may be initiated by the device reset module 210, and the factory default reset of the CPE device 105 may include a removal of one or more files from storage associated with the CPE device 105, thereby returning original or default settings to the CPE device 105. For example, a factory default reset of the CPE device 105 may include a removal of one or more files that include LAN (local area network) GUI login password, Wi-Fi SSID (service set identifier) name/password, parental control rules/policies, MAC (media access control) filter list, fixed DHCP (dynamic host configuration protocol) list, and/or other settings.

[0048] If, at 615, the determination is made that the option to backup device settings is accepted (i.e., the option to backup device settings is selected within the display window), the process 600 may proceed to 625. At 625, a display window including an identification of one or more device settings that are available for backing up may be generated and output. For example, the display window may be generated and output by the CPE device 105 (e.g., by the device reset module 210). In embodiments, the display window may provide a user with an option to select one or more of the identified device settings for backing up prior to a reset of the CPE device 105. For example, for each of the one or more identified device settings, the display window may include an icon (e.g., check box, etc.) that may be selected and/or de-selected by a user through the GUI.

[0049] At 630, a user selection of at least one of the device settings available for backing up may be received. The user selection of the at least one device setting may be received, for example, by the CPE device 105 (e.g., by the device reset module 210). In embodiments, the user selection of the at least one device setting may be received as a user selection of device setting(s) or confirmation of device setting(s) selected for backing up prior to a reset of the CPE

device 105. The at least one device setting may be selected for backing up through the display window including an identification of one or more device settings that are available for backing up (i.e., the display window generated and output at 625).

[0050] At 635, the selected device setting(s) may be backed up. For example, the device reset module 210 may backup the one or more selected device settings (e.g., the device settings selected at 630) by copying the selected device settings to a new location (e.g., new file location within RAM such as a device settings data store 215 of FIG. 2) or by selecting the selected device settings for retention during a device reset.

[0051] At 640, a backup and restore reset of the device may be carried out. The backup and restore reset of the device may be carried out, for example, by the device reset module 210. In embodiments, the device reset module 210 may carry out a backup and restore reset of the CPE device 105, wherein the one or more selected device settings are not removed from storage associated with the CPE device 105 during the reset.

[0052] At 645, the selected device settings may be restored from the backup. The selected device settings may be restored, for example, by the device reset module 210. In embodiments, the device reset module 210 may recover and restore a backup or copy of the selected device settings that was created prior to the reset of the device (e.g., the backup or copy of the device settings created at 635). For example, the device reset module 210 may recover the backup or copy of the selected device settings from device storage (e.g., RAM such as the device settings data store 215). In embodiments, where the selected device settings were not moved to a new location prior to the device reset and the selected device settings were not removed during

the device reset, the device reset module 210 may restore the selected device settings after the device reset is carried out.

[0053] FIG. 7 is a block diagram of a hardware configuration 700 operable to facilitate a device reset supporting a backup and restore of certain settings. The hardware configuration 700 can include a processor 710, a memory 720, a storage device 730, and an input/output device 740. Each of the components 710, 720, 730, and 740 can, for example, be interconnected using a system bus 750. The processor 710 can be capable of processing instructions for execution within the hardware configuration 700. In one implementation, the processor 710 can be a single-threaded processor. In another implementation, the processor 710 can be a multi-threaded processor. The processor 710 can be capable of processing instructions stored in the memory 720 or on the storage device 730.

[0054] The memory 720 can store information within the hardware configuration 700. In one implementation, the memory 720 can be a computer-readable medium. In one implementation, the memory 720 can be a volatile memory unit. In another implementation, the memory 720 can be a non-volatile memory unit.

[0055] In some implementations, the storage device 730 can be capable of providing mass storage for the hardware configuration 700. In one implementation, the storage device 730 can be a computer-readable medium. In various different implementations, the storage device 730 can, for example, include a hard disk device, an optical disk device, flash memory or some other large capacity storage device. In other implementations, the storage device 730 can be a device external to the hardware configuration 700.

[0056] The input/output device 740 provides input/output operations for the hardware configuration 700. In embodiments, the input/output device 740 can include one or more of a network interface device (e.g., an Ethernet card), a serial communication device (e.g., an RS-232 port), one or more universal serial bus (USB) interfaces (e.g., a USB 2.0 port), one or more wireless interface devices (e.g., an 802.11 card), and/or one or more interfaces for outputting video, voice, data, and/or other services to a device (e.g., television, computer, tablet, mobile device, STB, access point, etc.). In embodiments, the input/output device can include driver devices configured to send communications to, and receive communications from one or more networks (e.g., access network 110 of FIG. 1, WAN 115 of FIG. 1, etc.).

[0057] Those skilled in the art will appreciate that the invention improves upon methods and systems for initiating and carrying out a reset of a CPE device. Methods, systems, and computer readable media can be operable to facilitate a device reset supporting a backup and restore of certain settings. A device may recognize a request to carry out a reset of the device, wherein one or more certain device settings are backed up prior to the reset and restored following the reset. The request may be recognized as a depressing of a reset button and, while the reset button is depressed, a depressing of a button that is designated for backing up and restoring the one or more certain device settings. The request may be recognized as a request that is received through a GUI. The one or more certain device settings may be determined based upon a default selection, or the one or more certain device settings may be selected by a user.

[0058] The subject matter of this disclosure, and components thereof, can be realized by instructions that upon execution cause one or more processing devices to carry out the processes

and functions described above. Such instructions can, for example, comprise interpreted instructions, such as script instructions, e.g., JavaScript or ECMAScript instructions, or executable code, or other instructions stored in a computer readable medium.

[0059] Implementations of the subject matter and the functional operations described in this specification can be provided in digital electronic circuitry, or in computer software, firmware, or hardware, including the structures disclosed in this specification and their structural equivalents, or in combinations of one or more of them. Embodiments of the subject matter described in this specification can be implemented as one or more computer program products, i.e., one or more modules of computer program instructions encoded on a tangible program carrier for execution by, or to control the operation of, data processing apparatus.

[0060] A computer program (also known as a program, software, software application, script, or code) can be written in any form of programming language, including compiled or interpreted languages, or declarative or procedural languages, and it can be deployed in any form, including as a stand-alone program or as a module, component, subroutine, or other unit suitable for use in a computing environment. A computer program does not necessarily correspond to a file in a file system. A program can be stored in a portion of a file that holds other programs or data (e.g., one or more scripts stored in a markup language document), in a single file dedicated to the program in question, or in multiple coordinated files (e.g., files that store one or more modules, sub programs, or portions of code). A computer program can be deployed to be executed on one computer or on multiple computers that are located at one site or distributed across multiple sites and interconnected by a communication network.

[0061] The processes and logic flows described in this specification are performed by one or more programmable processors executing one or more computer programs to perform functions by operating on input data and generating output thereby tying the process to a particular machine (e.g., a machine programmed to perform the processes described herein). The processes and logic flows can also be performed by, and apparatus can also be implemented as, special purpose logic circuitry, e.g., an FPGA (field programmable gate array) or an ASIC (application specific integrated circuit).

[0062] Computer readable media suitable for storing computer program instructions and data include all forms of non-volatile memory, media and memory devices, including by way of example semiconductor memory devices (e.g., EPROM, EEPROM, and flash memory devices); magnetic disks (e.g., internal hard disks or removable disks); magneto optical disks; and CD ROM and DVD ROM disks. The processor and the memory can be supplemented by, or incorporated in, special purpose logic circuitry.

[0063] While this specification contains many specific implementation details, these should not be construed as limitations on the scope of any invention or of what may be claimed, but rather as descriptions of features that may be specific to particular embodiments of particular inventions. Certain features that are described in this specification in the context of separate embodiments can also be implemented in combination in a single embodiment. Conversely, various features that are described in the context of a single embodiment can also be implemented in multiple embodiments separately or in any suitable subcombination. Moreover, although features may be described above as acting in certain combinations and even initially claimed as such, one or more features from a claimed combination can in some cases be excised

from the combination, and the claimed combination may be directed to a subcombination or variation of a subcombination.

[0064] Similarly, while operations are depicted in the drawings in a particular order, this should not be understood as requiring that such operations be performed in the particular order shown or in sequential order, or that all illustrated operations be performed, to achieve desirable results. In certain circumstances, multitasking and parallel processing may be advantageous. Moreover, the separation of various system components in the embodiments described above should not be understood as requiring such separation in all embodiments, and it should be understood that the described program components and systems can generally be integrated together in a single software product or packaged into multiple software products.

[0065] Particular embodiments of the subject matter described in this specification have been described. Other embodiments are within the scope of the following claims. For example, the actions recited in the claims can be performed in a different order and still achieve desirable results, unless expressly noted otherwise. As one example, the processes depicted in the accompanying figures do not necessarily require the particular order shown, or sequential order, to achieve desirable results. In some implementations, multitasking and parallel processing may be advantageous.

We Claim:

1. A method comprising:

receiving a request to initiate a backup and restore reset of a device;
in response to the request to initiate the backup and restore reset of the device,
creating a backup of one or more certain settings associated with the device;
carrying out a reset of the device, wherein the backup of the one or more certain settings associated with the device is not removed from the device during the reset of the device;
following the reset of the device, restoring the one or more certain settings associated with the device from the backup of the one or more certain settings associated with the device.

2. The method of claim 1, wherein receiving the request to initiate the backup and restore reset of the device comprises:

detecting a depressing of a first button, the first button being designated for initiating a device reset; and
while the first button is depressed, detecting a depressing of a second button, the second button being designated for initiating a backup and restore reset of the device.

3. The method of claim 2, wherein the second button comprises a WPS button.

4. The method of claim 1, wherein receiving the request to initiate the backup and restore reset of the device comprises:

receiving a request to initiate a reset of the device, wherein the request to initiate the reset of the device is received through a GUI;

outputting a display window, the display window prompting a user to accept or decline an option to backup the one or more certain settings prior to initiating the reset of the device; and

receiving a user input accepting the option to backup the one or more certain settings prior to initiating the reset of the device.

5. The method of claim 4, wherein the one or more certain settings are selected by a user through a GUI listing one or more settings that are available for backing up.

6. The method of claim 5, wherein the GUI is presented to the user in response to receiving the user input accepting the option to backup the one or more certain settings.

7. The method of claim 1, wherein creating a backup of the one or more certain settings associated with the device comprises:

creating a copy of the one or more certain settings from a location at which the one or more certain settings are stored; and

storing the copy of the one or more certain settings at a new location within storage associated with the device.

8. A device comprising one or more modules that:

receive a request to initiate a backup and restore reset of the device;

in response to the request to initiate the backup and restore reset of the device,

create a backup of one or more certain settings associated with the device;

carry out a reset of the device, wherein the backup of the one or more certain settings associated with the device is not removed from the device during the reset of the device; and

following the reset of the device, restore the one or more certain settings associated with the device from the backup of the one or more certain settings associated with the device.

9. The device of claim 8, wherein receiving the request to initiate the backup and restore reset of the device comprises:

detecting a depressing of a first button, the first button being designated for initiating a device reset; and

while the first button is depressed, detecting a depressing of a second button, the second button being designated for initiating a backup and restore reset of the device.

10. The device of claim 8, wherein receiving the request to initiate the backup and restore reset of the device comprises:

receiving a request to initiate a reset of the device, wherein the request to initiate the reset of the device is received through a GUI;

outputting a display window, the display window prompting a user to accept or decline an option to backup the one or more certain settings prior to initiating the reset of the device; and

receiving a user input accepting the option to backup the one or more certain settings prior to initiating the reset of the device.

11. The device of claim 10, wherein the one or more certain settings are selected by a user through a GUI listing one or more settings that are available for backing up.

12. The device of claim 11, wherein the GUI is presented to the user in response to receiving the user input accepting the option to backup the one or more certain settings.

13. The device of claim 8, wherein creating a backup of the one or more certain settings associated with the device comprises:

creating a copy of the one or more certain settings from a location at which the one or more certain settings are stored; and

storing the copy of the one or more certain settings at a new location within storage associated with the device.

14. One or more non-transitory computer readable media having instructions operable to cause one or more processors to perform the operations comprising:

receiving a request to initiate a backup and restore reset of a device;

in response to the request to initiate the backup and restore reset of the device, creating a backup of one or more certain settings associated with the device;

carrying out a reset of the device, wherein the backup of the one or more certain settings associated with the device is not removed from the device during the reset of the device;

following the reset of the device, restoring the one or more certain settings associated with the device from the backup of the one or more certain settings associated with the device.

15. The one or more non-transitory computer-readable media of claim 14, wherein receiving the request to initiate the backup and restore reset of the device comprises:

detecting a depressing of a first button, the first button being designated for initiating a device reset; and

while the first button is depressed, detecting a depressing of a second button, the second button being designated for initiating a backup and restore reset of the device.

16. The one or more non-transitory computer-readable media of claim 15, wherein the second button comprises a WPS button.

17. The one or more non-transitory computer-readable media of claim 14, wherein receiving the request to initiate the backup and restore reset of the device comprises:

receiving a request to initiate a reset of the device, wherein the request to initiate the reset of the device is received through a GUI;

outputting a display window, the display window prompting a user to accept or decline an option to backup the one or more certain settings prior to initiating the reset of the device; and

receiving a user input accepting the option to backup the one or more certain settings prior to initiating the reset of the device.

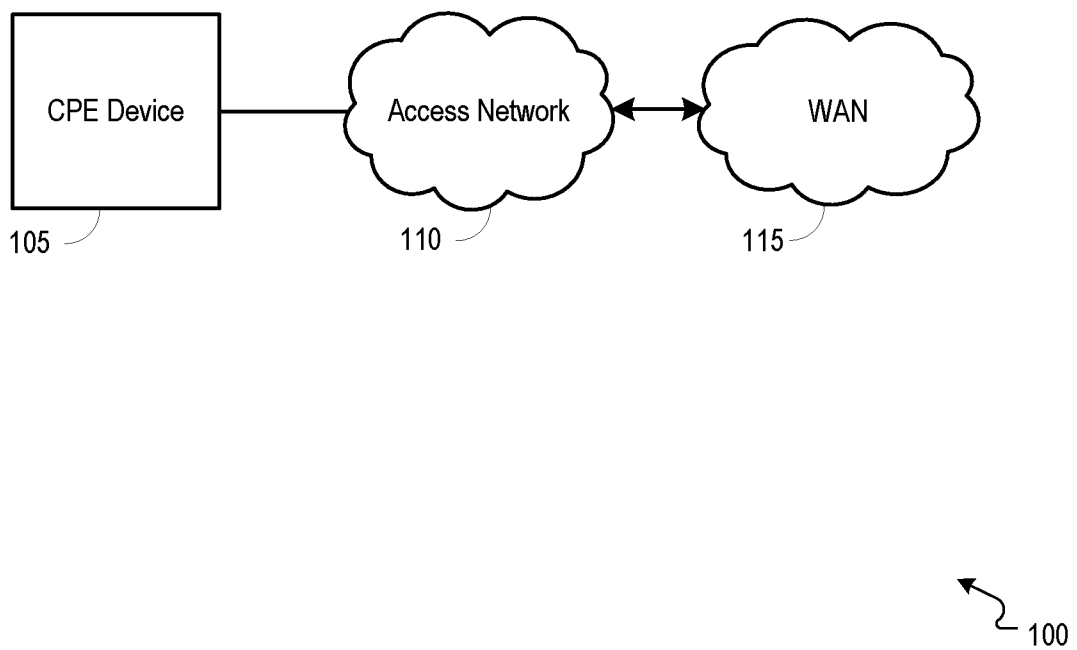
18. The one or more non-transitory computer-readable media of claim 17, wherein the one or more certain settings are selected by a user through a GUI listing one or more settings that are available for backing up.

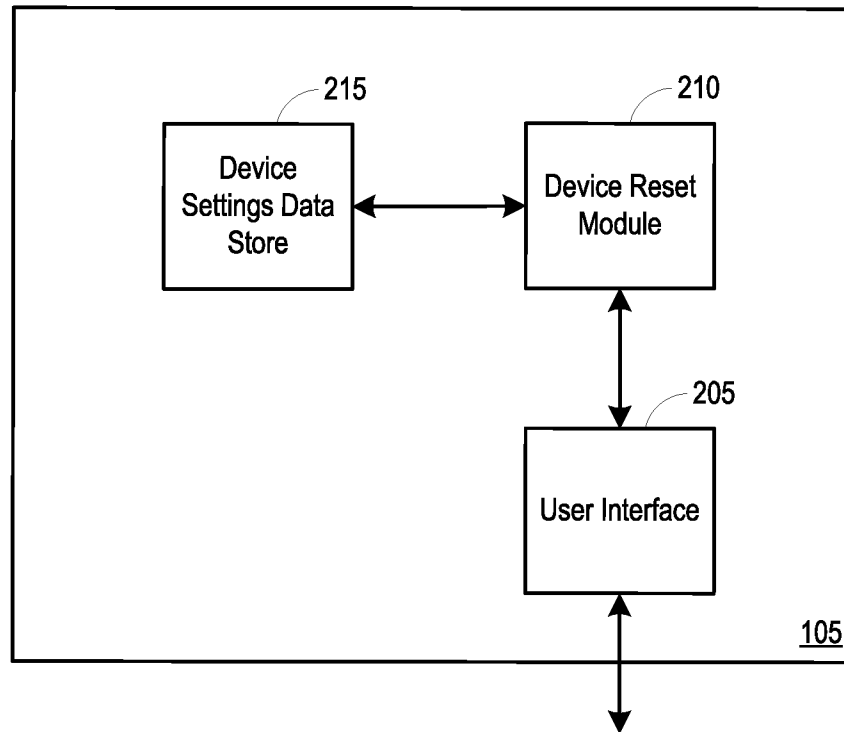
19. The one or more non-transitory computer-readable media of claim 18, wherein the GUI is presented to the user in response to receiving the user input accepting the option to backup the one or more certain settings.

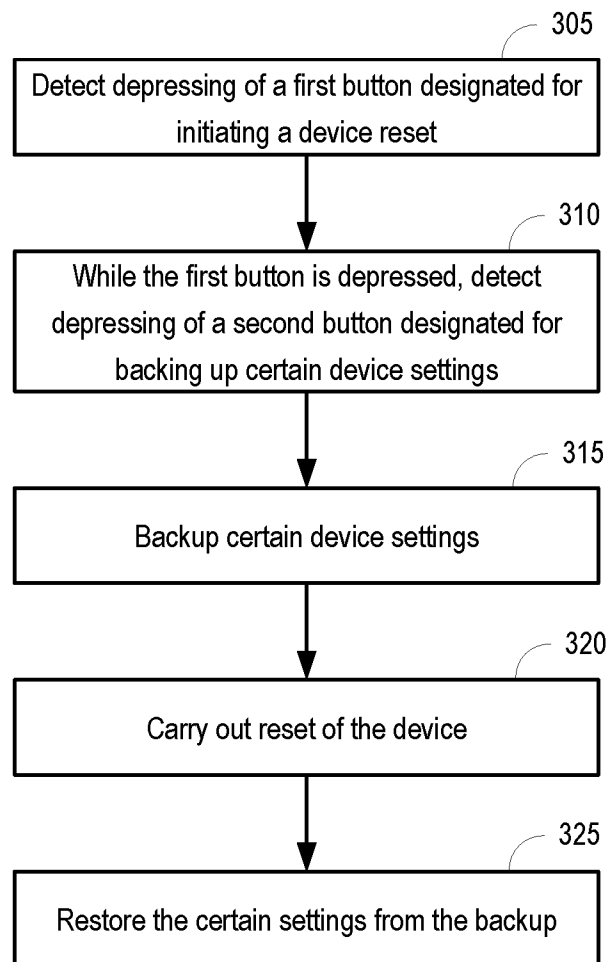
20. The one or more non-transitory computer-readable media of claim 14, wherein creating a backup of the one or more certain settings associated with the device comprises:

creating a copy of the one or more certain settings from a location at which the one or more certain settings are stored; and

storing the copy of the one or more certain settings at a new location within storage associated with the device.

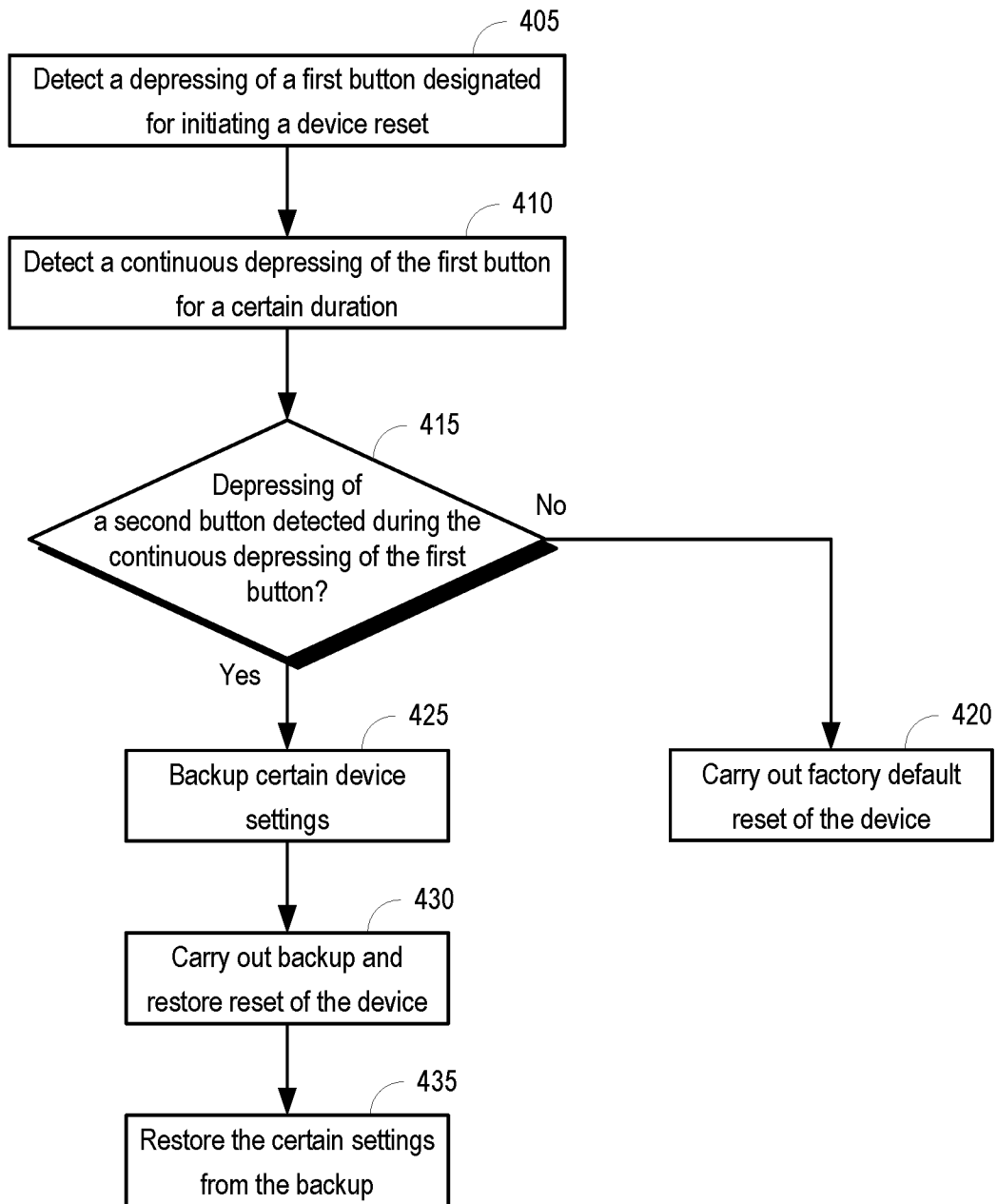
**FIG. 1**

**FIG. 2**



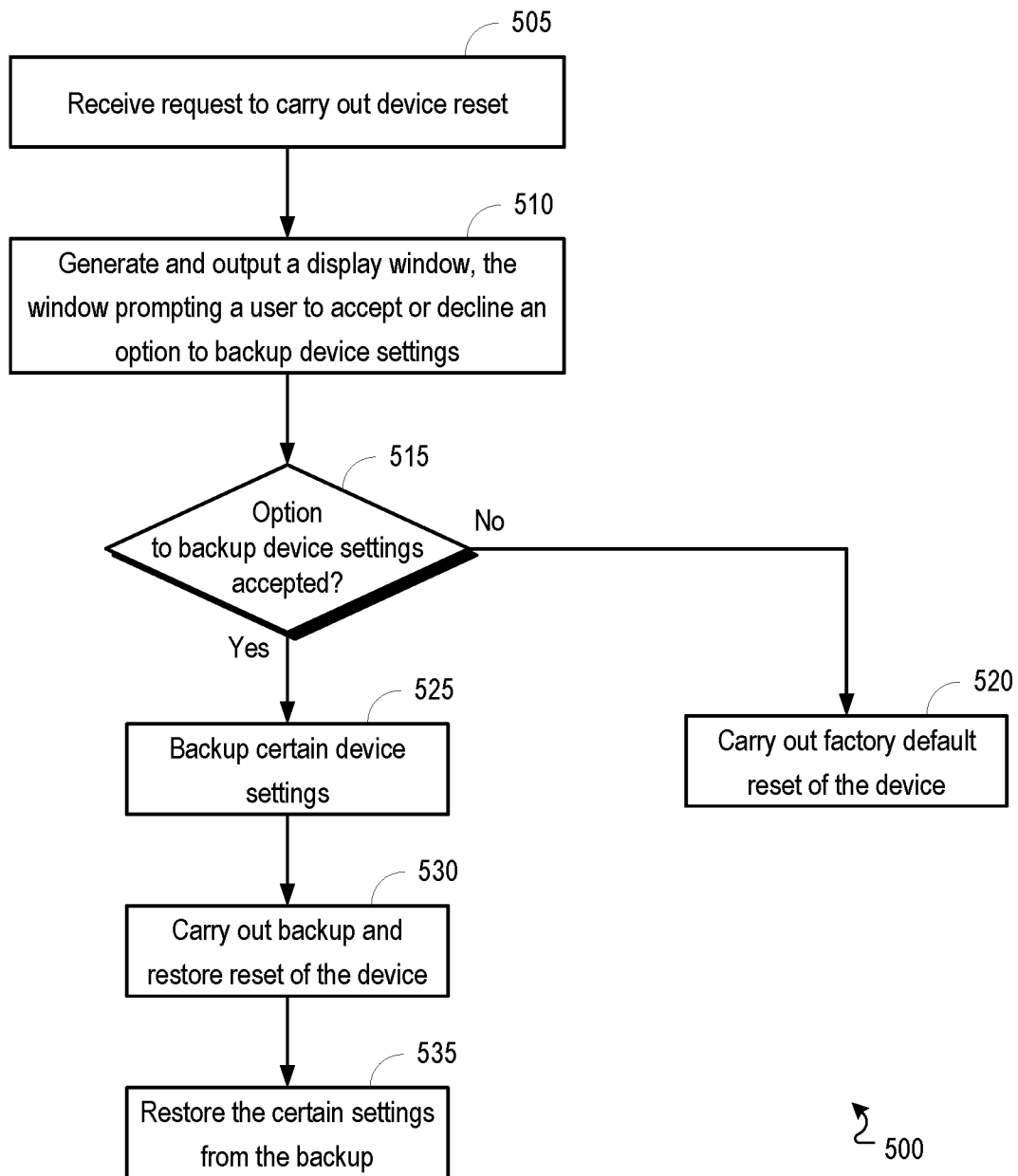
300

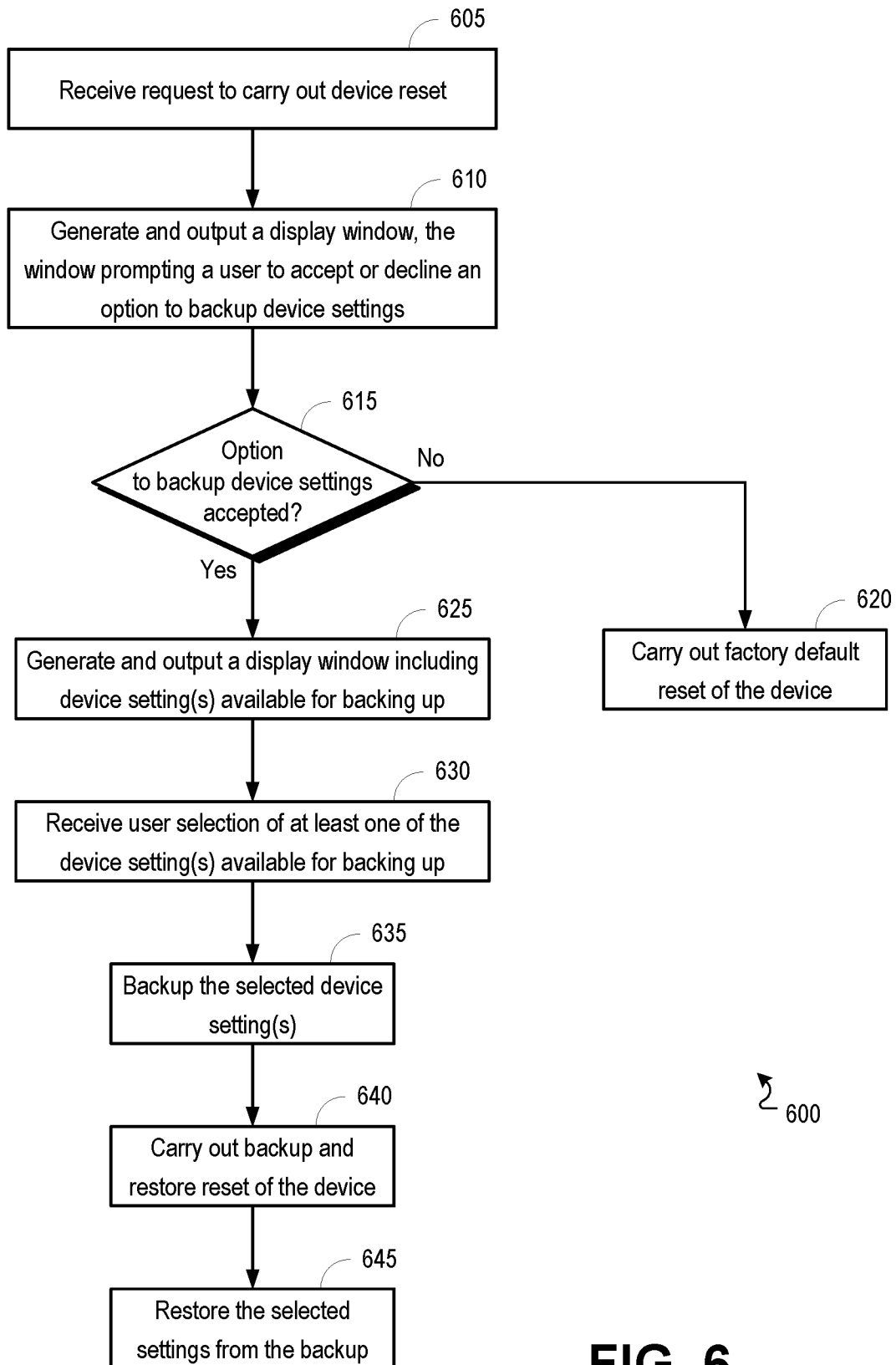
FIG. 3

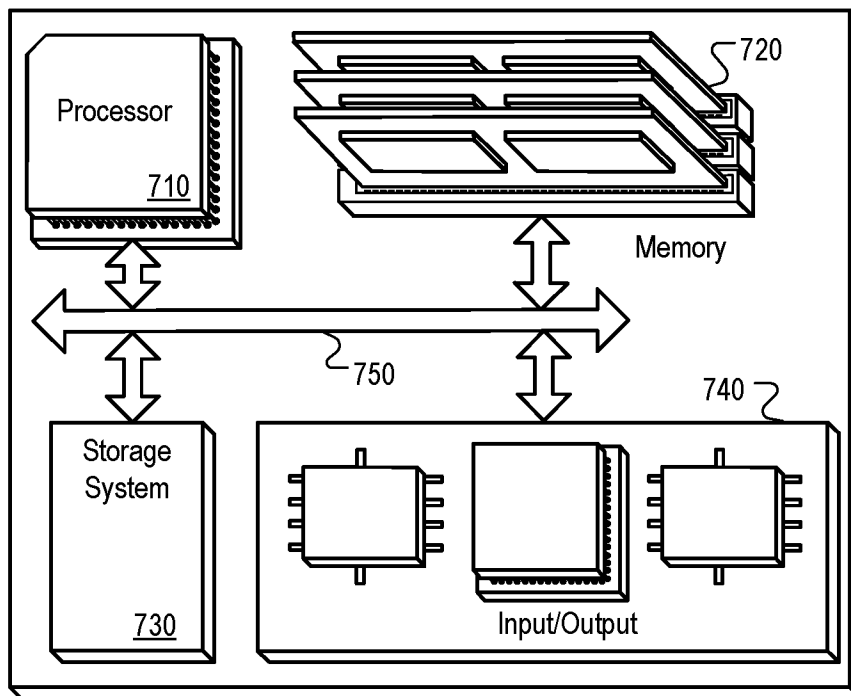


400

FIG. 4

**FIG. 5**

**FIG. 6**



700

FIG. 7

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2019/081738

A. CLASSIFICATION OF SUBJECT MATTER

H04L 12/24(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CNPAT, WPI, EPODOC, CNKI, IEEE: reset, backup, restore, init, initiating, router, switch, button, WPS, press, GUI, display

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 107566158 A (SHANGHAI PHICOMM COMMUNICATION CO., LTD.) 09 January 2018 (2018-01-09) description, paragraphs [0051]-[0080]	1-20
A	CN 107566675 A (SHENZHEN COMNECT TECHNOLOGY CO., LTD.) 09 January 2018 (2018-01-09) the whole document	1-20
A	CN 106936631 A (BEIJING HIWIFI TECHNOLOGY CO., LTD.) 07 July 2017 (2017-07-07) the whole document	1-20
A	US 2008005344 A1 (FORD, Daniel E. et al.) 03 January 2008 (2008-01-03) the whole document	1-20



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

“A” document defining the general state of the art which is not considered to be of particular relevance

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“O” document referring to an oral disclosure, use, exhibition or other means

“P” document published prior to the international filing date but later than the priority date claimed

“T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

“X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

“Y” document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

“&” document member of the same patent family

Date of the actual completion of the international search

05 December 2019

Date of mailing of the international search report

02 January 2020

Name and mailing address of the ISA/CN

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2019/081738

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
CN	107566158	A	09 January 2018	WO	2019024385	A1	07 February 2019
CN	107566675	A	09 January 2018	None			
CN	106936631	A	07 July 2017	None			
US	2008005344	A1	03 January 2008	None			