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(54) MOBILE COMPUTING DEVICE RECONFIGURATION IN RESPONSE TO ENVIRONMENTAL FACTORS INCLUDING CONSUMPTION OF BATTERY POWER AT DIFFERENT RATES

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G06F 9/44 (2006.01)

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(52) **U.S. Cl.**

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(Continued)

(58) **Field of Classification Search**

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(Continued)

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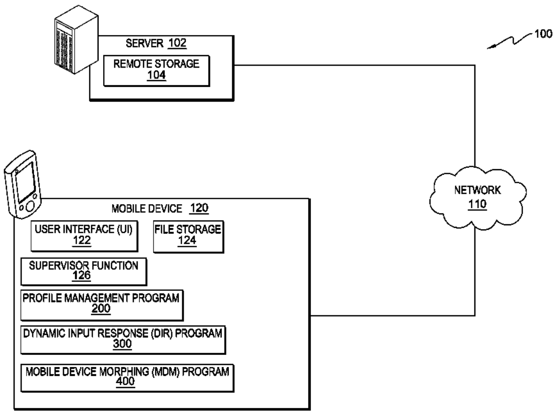
(57) ABSTRACT

A method for dynamically modifying a mobile device. The method includes a computer processor identifying a plurality of profiles on a mobile device. The method further includes a computer processor receiving one or more inputs on the mobile device. The method further includes a computer processor identifying at least one trigger that corresponds to the received one or more inputs, wherein the at least one trigger is associated with at least one profile of the plurality of profiles. The method further includes a computer processor determining if the at least one trigger activates a response, based at least in part, on data included in the at least one profile that is associated with the at least one trigger. The method further includes a computer processor responding to the determination that the at least one trigger activates a response and applying the response to the mobile device.

6 Claims, 4 Drawing Sheets



(51) **Int. Cl.**

G06F 1/32	(2006.01)
G06F 1/26	(2006.01)
G06F 9/445	(2006.01)

(52) **U.S. Cl.**
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(58) **Field of Classification Search**
USPC 710/62–74
See application file for complete search history.

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Krishnamurthy, et al., "Mobile Computing Device Reconfiguration in Response to Environmental Factors", U.S. Appl. No. 14/571,994, filed Dec. 16, 2014.

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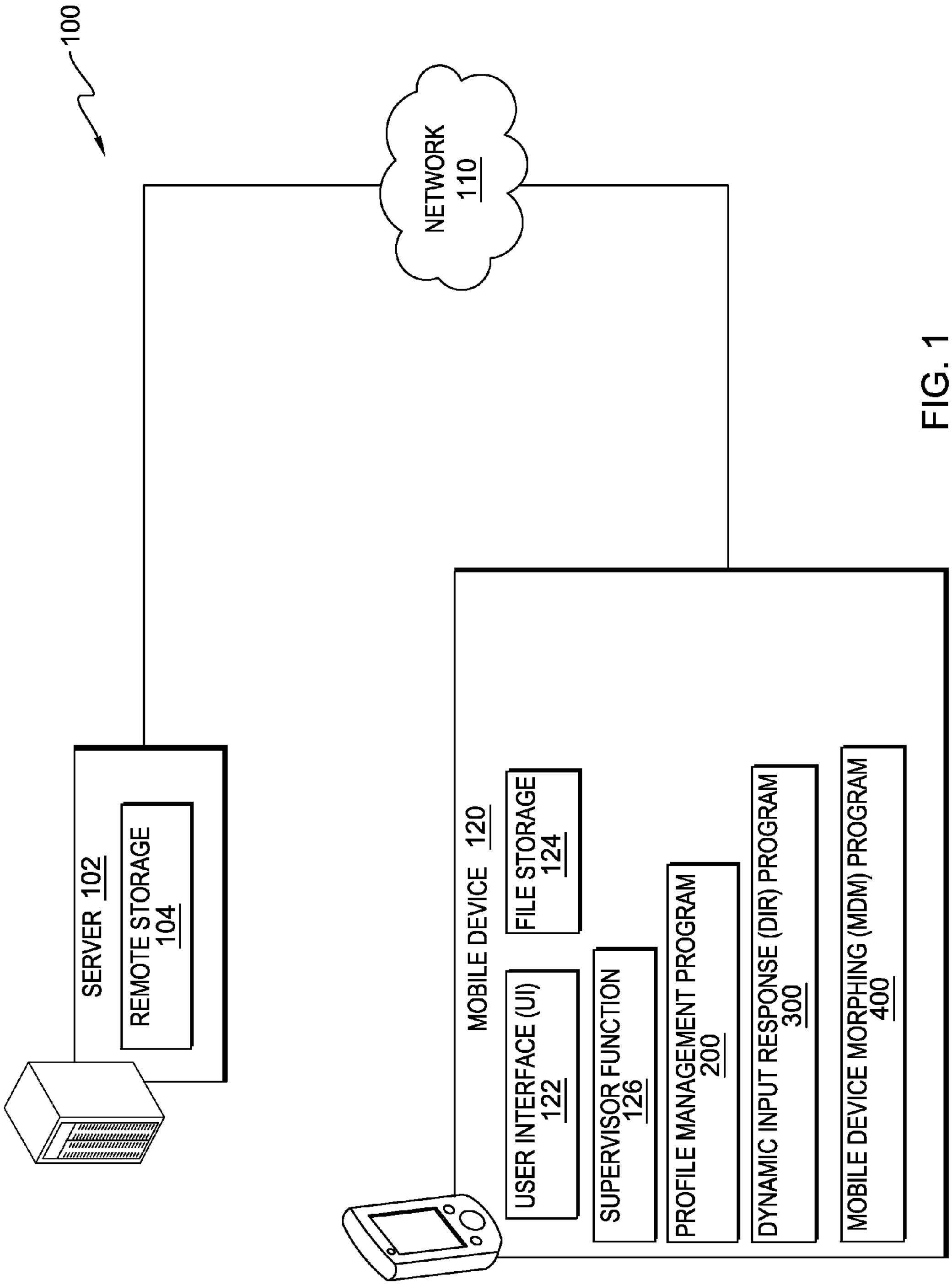
100
NETWORK 110
SERVER 102
REMOTE STORAGE 104
MOBILE DEVICE 120
USER INTERFACE (UI) 122
FILE STORAGE 124
SUPERVISOR FUNCTION 126
PROFILE MANAGEMENT PROGRAM 200
DYNAMIC INPUT RESPONSE (DIR) PROGRAM 300
MOBILE DEVICE MORPHING (MDM) PROGRAM 400

FIG. 1

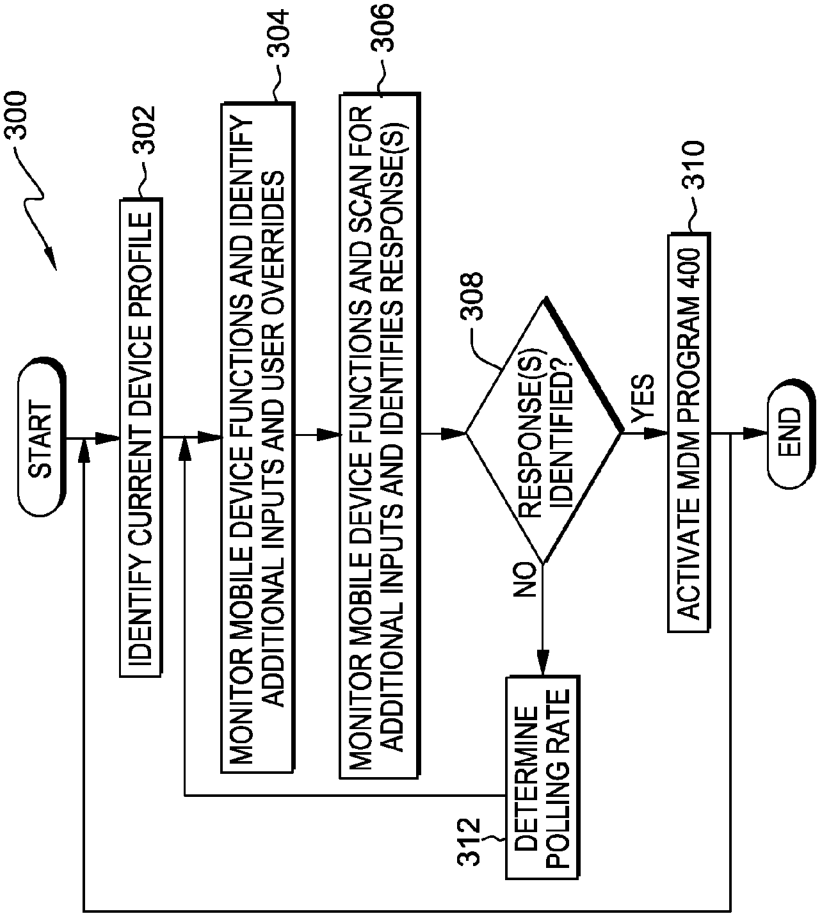
300
START
IDENTIFY CURRENT DEVICE PROFILE
302
MONITOR MOBILE DEVICE FUNCTIONS AND IDENTIFY ADDITIONAL INPUTS AND USER OVERRIDES
304
MONITOR MOBILE DEVICE FUNCTIONS AND SCAN FOR ADDITIONAL INPUTS AND IDENTIFIES RESPONSE(S)
306
308
RESPONSE(S) IDENTIFIED?
NO
YES
DETERMINE POLLING RATE
312
ACTIVATE MDM PROGRAM 400
310
END

FIG. 3

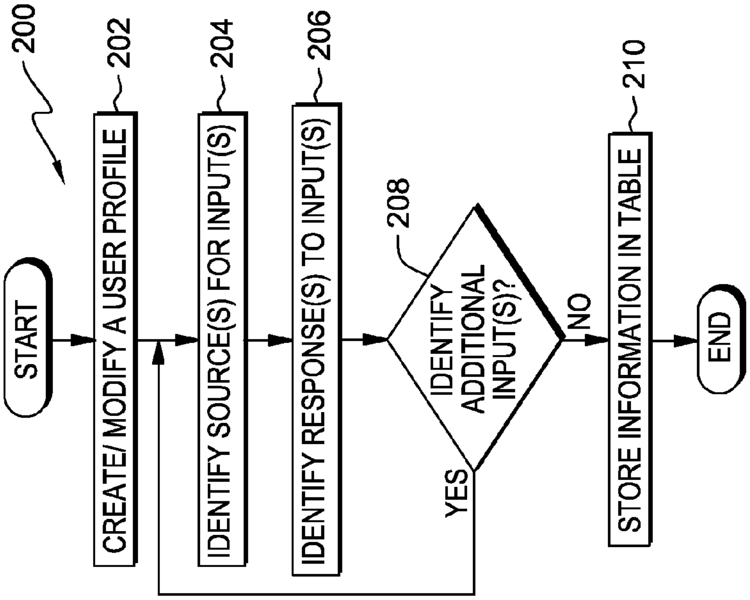
200
START
CREATE/ MODIFY A USER PROFILE
202
IDENTIFY SOURCE(S) FOR INPUT(S)
204
IDENTIFY RESPONSE(S) TO INPUT(S)
206
208
IDENTIFY ADDITIONAL INPUT(S)?
YES
NO
STORE INFORMATION IN TABLE
210
END

FIG. 2

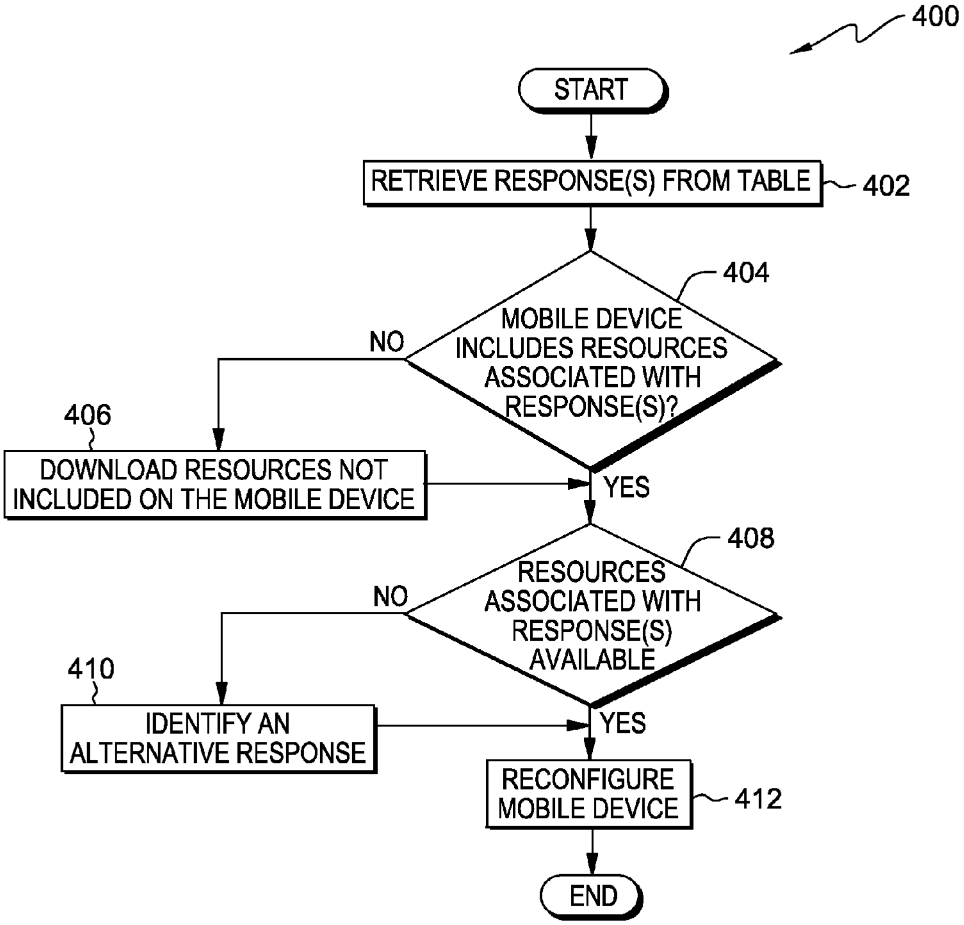
400
START
RETRIEVE RESPONSE(S) FROM TABLE
402
404
MOBILE DEVICE INCLUDES RESOURCES ASSOCIATED WITH RESPONSE(S)?
NO
406
DOWNLOAD RESOURCES NOT INCLUDED ON THE MOBILE DEVICE
YES
408
RESOURCES ASSOCIATED WITH RESPONSE(S) AVAILABLE
NO
410
IDENTIFY AN ALTERNATIVE RESPONSE
YES
RECONFIGURE MOBILE DEVICE
412
END

FIG. 4

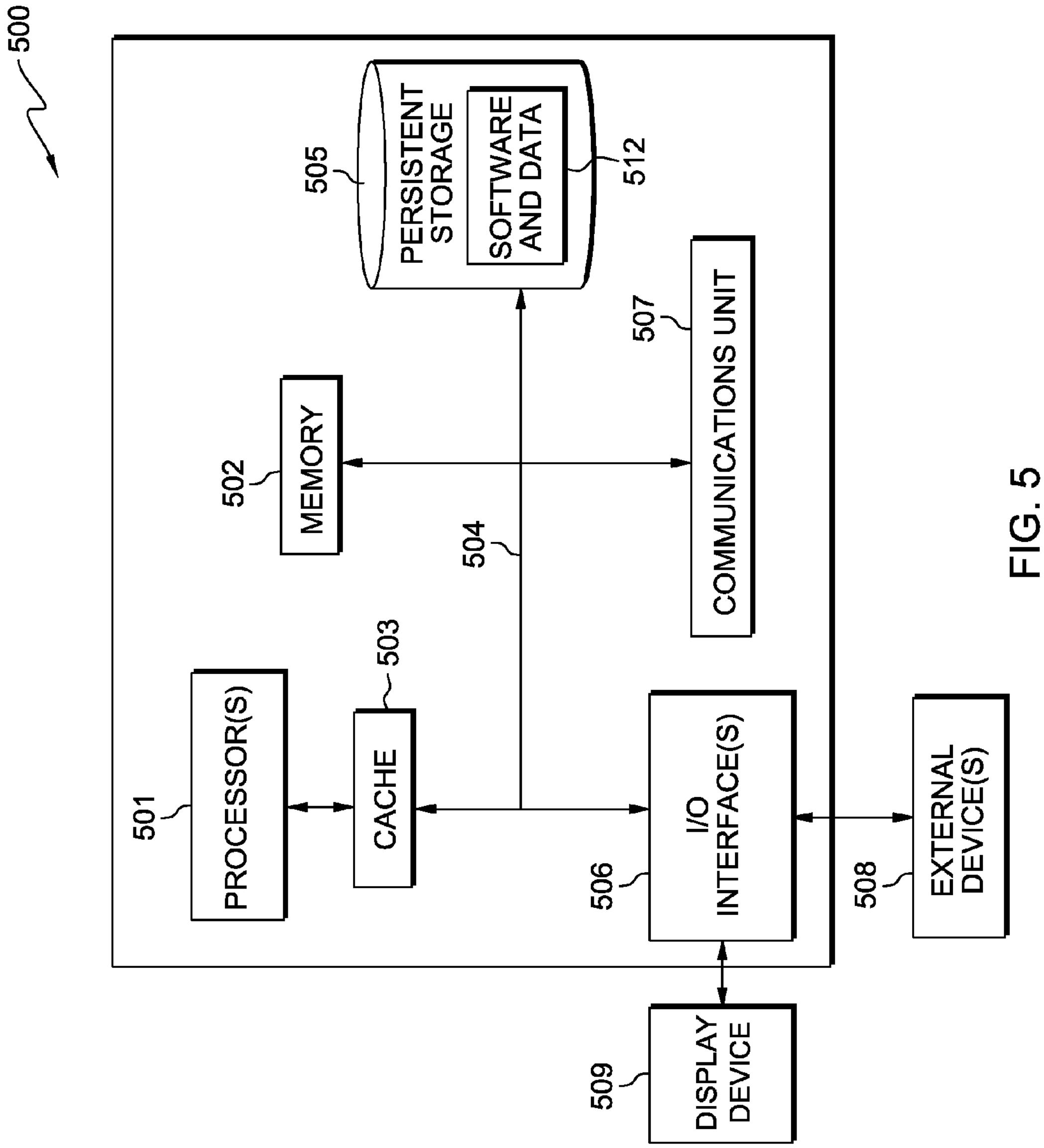
500
PROCESSOR(S)
501
CACHE
503
MEMORY
502
504
PERSISTENT STORAGE
505
SOFTWARE AND DATA
512
COMMUNICATIONS UNIT
507
I/O INTERFACE(S)
506
EXTERNAL DEVICE(S)
508
DISPLAY DEVICE
509

FIG. 5

MOBILE COMPUTING DEVICE RECONFIGURATION IN RESPONSE TO ENVIRONMENTAL FACTORS INCLUDING CONSUMPTION OF BATTERY POWER AT DIFFERENT RATES

BACKGROUND OF THE INVENTION

The present invention relates generally to the field of mobile computing devices, and more particularly to a mobile computing device responding to internal and external stimuli.

Developments in cellular and computing technology have resulted in proliferation of smart mobile computing (e.g., handheld, electronic) devices, such as smartphones, tablet computers, advanced e-Readers, personal digital assistants (PDAs), etc. Further advances in miniaturization and materials have produced wearable devices with advanced capabilities, such as digital eyeglasses (e.g., smart glasses) and smart watches. Companies and businesses are developing e-commerce applications to take advantage of the opportunities presented by the growing number of highly-connected mobile users. While businesses strive to enhance the user experience of e-commerce applications, mobile computing devices are expanding beyond e-mail, photography, web browsing, multi-media presentations, and Bluetooth® communication. Enterprise systems allow a user to remotely access work-related functions, such as e-mail and databases on a mobile computing device. Mobile devices contribute to the growing network of social interactions and the connectedness of users. Advanced features incorporated into mobile devices include accelerometers, global positioning system (GPS) navigation, thermometers, altimeters, barometers, compasses, chronographs, near field communication (NFC), and radio-frequency identification (RFID). In addition, numerous miniaturized accessories transform some mobile devices into equipment with additional functionality that ranges from amusement (e.g., radio control toy console, fish finder) to mission-critical (e.g., smoke alarm, infrared hot-spot detector, medical condition detector, portable microscope, radiation detector, etc.).

As mobile devices become ubiquitous, these devices are as common to some users as a wallet/purse or a set of keys. For other users, a mobile computing device is a veritable electronic "Swiss army knife," handling a plurality of functions and in some cases replacing the wallet and keys of a user. Coupled with Internet access, functions or programs that are not currently available on a mobile device can be quickly updated, acquired, and used.

SUMMARY

According to an aspect of the present invention, there is a method, computer program product, and/or system for dynamically modifying a mobile device. The method includes a computer processor identifying a plurality of profiles on a mobile device. The method further includes a computer processor receiving one or more inputs on the mobile device. The method further includes a computer processor identifying at least one trigger that corresponds to the received one or more inputs, wherein the at least one trigger is associated with at least one profile of the plurality of profiles. The method further includes a computer processor determining if the at least one trigger activates a response, based at least in part, on data included in the at least one profile that is associated with the at least one trigger. The method further includes a computer processor responding to the determination that the at least one trigger activates a response and applying the response to the mobile device.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** illustrates a distributed data processing environment, in accordance with an embodiment of the present invention.

FIG. **2** depicts a flowchart of the steps of a profile management program, in accordance with an embodiment of the present invention.

FIG. **3** depicts a flowchart of the steps of a dynamic input response program, in accordance with an embodiment of the present invention.

FIG. **4** depicts a flowchart of the steps of a mobile device morphing program, in accordance with an embodiment of the present invention.

FIG. **5** is a block diagram of components of a computer, in accordance with an embodiment of the present invention.

DETAILED DESCRIPTION

Embodiments of the current invention recognize that mobile computing devices (mobile devices) perform a diverse set of functions and provide a wide variety of behaviors for various purposes. Because a user may utilize the same mobile device for both work and personal use, the ability to change aspects and configurations of the mobile device can be desirable. However, a mobile device is unable to smoothly react and dynamically adapt (e.g., morph) to the match the current environment of a user and provide services for different requirements in a well-integrated fashion. In addition, a user may be unaware of how many applications are active in the background utilizing resources and which components of the mobile device, especially multi-core mobile devices, are consuming electrical power without providing a user with a tangible benefit.

The purpose of incorporating the "morphing" capabilities on a mobile device is seamlessly blending the appearance, capability, and behavior of the mobile device, transforming a utilitarian device into an integral part of the lifestyle of a user. An additional benefit of the morphing capability is the ability of the mobile device to optimize itself (e.g., improve energy management, automatically employ encryption or security protocols, and prepare for emergency situations). A mobile device implementing embodiments of the current invention dynamically morphs, based on knowledge of the surroundings of the mobile device, the state of the mobile device, a variety of stimuli (i.e., inputs) both internal and external, and information provided by one or more user profiles, which define various response scenarios based on the available inputs and stimuli.

Embodiments of the current invention herein described relate to incorporating dynamic morphing capabilities on a mobile device. The descriptions of the various embodiments of the present invention herein presented are for the purpose of illustrations but are not intended to be exhaustive or limited to the embodiments disclosed. Many modifications and variations will be apparent to those of ordinary skill in the art without departing from the scope and spirit of the invention. For example, embodiments of the current invention can be applied to alternate physical implementations of the presentation (e.g., GUI environment) and interaction methods. In one scenario, visual presentations can be combined with voice recognition or a motion sensing device (e.g., eye mapping) to create a "hands-free" implementation (e.g., smart-glasses).

Some embodiments of the current invention facilitate improved energy management, software updating, and the wholesale modification of the mobile device, which modifies the "stack" of the mobile device. The "stack" refers to various hardware and software configurations of a mobile device. The "stack" (e.g., system image) may include, but is not limited to, hardware (e.g., reconfigurable portion), the operating system, control functions, firmware, the software applications, and the service provider(s) associated with the mobile device. A stack "image" is a backup, replica, or clone of a stack configuration. A mobile device with sufficient persistent storage may store multiple stack images locally on the mobile device and avoid delays or connectivity issues storing and retrieving (e.g., downloading) stack images from remote storage.

One key group of triggers for some embodiments of the current invention are the battery life, battery charge-level, and battery charging status. Various profiles may utilize the battery charge-level to deactivate various features (i.e., functions) on the mobile device to improve energy efficiency or consume less battery power of the mobile device. Subsequently, as the battery charge-level is replenished by recharging the battery of the mobile, another trigger/response or another profile permits the activation of previously deactivated features. Whereas, another embodiment may utilize a profile that controls the remote/automatic updates to software apps on the mobile device utilizing the battery charge-level as an input (e.g., trigger). For example, a profile that swaps stacks may constrain the apps that may update to the apps active in the stack.

Monitoring the modifications to the stack subsequently triggers the loading of a different profile and the associated stack. Alternatively, monitoring the schedule of the user, the GPS position of the user, and the behaviors defined by the user, a profile can trigger the loading of a stack that prevents software updates from initiating based on the battery charge and the proximity of the user to a charging location (e.g., home, work). Since the stack includes configurable hardware, a profile that modifies the stack or a profile that invokes an app that can disable one or more cores (e.g., central processing unit) of a multi-core mobile device improves the energy efficiency of the device. Some mobile devices also allow the clock speed associated with a central processing unit (CPU) or cores to be controlled, incorporating an additional stack feature that effects energy efficiency and energy management.

In a different embodiment, multiple mobile devices incorporate the current invention providing the capability to swap or clone a mobile device. In one scenario, remotely storing the stack, profiles, personal data, and other information of different users enables one mobile device to morph into a second mobile device of another user. For example, in another scenario, a group of users with mobile devices may desire to quickly obtain the capabilities of the mobile device of another user, whether or not that user is present. For example, users joining in a search-and-rescue operation require the same capabilities (e.g., terrain mapping, emergency beacon tracking, local weather, etc.) that the professional rescue personal have on their mobile devices. In this example, the professional rescue personal provide the group of users, with mobile devices, access to a "search-and-rescue" profile.

The present invention will now be described in detail with reference to the Figures. FIG. **1** is a functional block diagram illustrating distributed data processing environment **100** in an embodiment, in accordance with the present invention. An embodiment of distributed data processing environment **100** includes server **102** and mobile device **120** interconnected over network **110**. Many modifications to the depicted environment may be made by those skilled in the art without departing from the scope of the invention as recited by the claims.

Server **102** may be a laptop computer, a tablet computer, a netbook computer, a personal computer (PC), a desktop computer, a personal digital assistant (PDA), a smart phone, or any programmable computer system known in the art. In certain embodiments, server **102** represents a computer system utilizing clustered computers and components (e.g., database server computers, application server computers, etc.) that act as a single pool of seamless resources when accessed through network **110**, as is common in data centers and with cloud-computing applications. In general, server **102** is representative of any programmable electronic device or combination of programmable electronic devices capable of executing machine readable program instructions and communicating with client computers, such as mobile device **120** via network **110**. Server **102** may include components, as depicted and described in further detail with respect to FIG. **5**, in accordance with embodiments of the present invention.

Server **102** includes remote storage **104** and various programs (not shown). In an embodiment, server **102** contains device "imaging" software to create and store duplicate versions of mobile device **120**. In one scenario, an image is a complete backup of the software, operating system, user files, etc. of mobile device **120**. In another scenario, the "images" are incremental backups.

In one embodiment, mobile device **120** and server **102** communicate through network **110**. Network **110** can be, for example, a local area network (LAN), a telecommunications network, a wireless local area network (WLAN), a wide area network (WAN) such as the Internet, or any combination of the previous, and can include wired, wireless, or fiber optic connections. In general, network **110** can be any combination of connections and protocols that will support communications between mobile device **120** and server **102**, in accordance with embodiments of the present invention. In another embodiment, network **110** operates locally via wired, wireless, or optical connections and can be any combination of connections and protocols (e.g., NFC, laser, infrared, etc.).

In one scenario, network **110** supports communication between mobile device **120** and a plurality of other devices. In another scenario, mobile device **120** acts as a "local hub" for network **110** permitting information to be exchanged between the one or more devices, mobile device **120**, or a different mobile device. In one example, a device may be a powered electronic device that is not a computing device (e.g., wireless speakers). In this example, mobile device **120** may monitor the information exchanged between devices. The information may include content that acts as stimuli to trigger (e.g., activate) a response on mobile device **120**. For example, a brown-out warning detected within the communication of local devices may trigger an energy conservation profile on mobile device **120**. In addition, the morph to an energy conservation profile of mobile device **120** may subsequently transmit a warning to other devices controlled by the user. For example, a PC receiving the warning from mobile device **120** may institute back-up and save work protocols. In another example, a device may be a small, powered computing device, such a smartwatch or a fitness device. In yet another example, a device may be unpowered, such as an RFID tag embedded within or attached to an object. Network **110**, connected to mobile device **120**, may provide input (e.g., stimuli) from local sources utilized by an embodiment of the current invention to trigger one or more morphing responses.

Mobile device **120** may be a smart phone, a tablet computer, a netbook computer, a personal digital assistant (PDA), a wearable device (e.g., digital eyeglasses, smart glasses, smart watches), a laptop computer, or any programmable computer system operating utilizing wired or wireless network communications (e.g., WAN, laser, infra-red, etc.) known in the art. In general, mobile device **120** is representative of any programmable electronic device or combination of programmable electronic devices capable of executing machine readable program instructions and communicating with computers, such as server **102** via network **110**. Mobile device **120** may include components, as depicted and described in further detail with respect to FIG. **5**, in accordance with embodiments of the present invention.

Mobile device **120** includes user interface (UI) **122**, file storage **124**, supervisor function (supervisor) **126**, profile management program **200**, dynamic input response (DIR) program **300**, and mobile device morphing (MDM) program **400**. A user of mobile device **120** can interact with UI **122** via a singular device, such as a touch screen (e.g., display) that performs both input to a graphical user interface (GUI) and as an output device (e.g., a display) presenting a plurality of icons associated with software applications or images depicting the executing software application. Optionally, a software application can generate UI **122**, operating within the GUI of mobile device **120**. UI **122** accepts input from a plurality of input/output (I/O) devices (not shown) including, but not limited to, a tactile sensor interface (e.g., a touch screen, a touchpad) or a natural user interface (e.g., voice control unit, motion capture device, cyberglove, etc.). In addition to the audio and visual interactions that mobile device **120** may provide, a peripheral, such as a cyberglove, may provide haptic feedback to a user. An I/O device interfacing with UI **122** may be connected to mobile device **120** which may operate utilizing wired (e.g., USB port) or wireless network communications (e.g., infrared, NFC, etc.). For example, an I/O device may be a peripheral, such as a keyboard, a mouse, a trackball, and a click wheel that provide input from a user.

File storage **124** stores the user profiles that dictate the responses and morphing behavior to predefined inputs or stimuli. In one embodiment, a user profile is comprised of a plurality of inputs and associated responses. In another embodiment, each user profile is one set of inputs and associated responses.

Supervisor **126** is one or more high-level functions executing on mobile device **120**. In one embodiment, supervisor **126** monitors the state of a plurality of features of mobile device **120**. The state or change in state of a feature (e.g., camera, GPS, system clock, etc.) provide stimuli that initiates a morphing response. In another embodiment, supervisor **126** monitors feedback and results from one or more software programs (e.g., facial recognition, audio recognition, RFID information, an Internet search, biometric scan, etc.) to provide stimuli or additional inputs which may be needed to further qualify which one or more responses initiate.

Profile management program **200** receives input from a user to create or modify a user profile. A user identifies one or more inputs that trigger one or more responses and profile management program **200** associates the one or more triggers with one or more responses within a user profile and stores the information in a table or database within file storage **124**. In some embodiments, a user profile may identify multiple logically triggered responses that may occur in parallel or in series. For example, an input occurring during a predetermined period of time may produce two or three results (e.g., a person's name, social media information, and professional bio/abstract). In another example, the initial input may trigger multiple responses, each additional input as it occurs further constrains subsequent responses until a singular response is identified.

Dynamic input response (DIR) program **300** identifies the current profile (e.g., installed software, backgrounds, active features and software, operating system, etc.) of mobile device **120**. In one embodiment, the current system profile is stored on mobile device **120** within file storage **124**. In another embodiment, the current profile of mobile device **120** or a stack image (e.g., backup, replica, clone) are stored on server **102** in remote storage **104**. For example, if the operating system and applications on mobile device **120** are replaced with a different operating system and a different group of applications, as the result of a response, it may be easier to download the stack image of mobile device **120** rather than re-install and reconfigure the operating and software applications. In another embodiment, device profiles and associated micro-kernels are stored in protected memory (not shown) on mobile device **120**. In one embodiment, DIR program **300** utilizes supervisor **126** to monitor device functions (e.g., states, values of the states, etc.). In some embodiments, DIR program **300** utilizes supervisor **126** or another software program to identify additional information associated with a response, which subsequently acts as an input that initiates another response. Based, at least in part, on the user profile and the identified response, DIR program **300** subsequently activates MDM program **400**. In one scenario, DIR program **300** initiates a response based on the analysis of a static input (e.g., a picture, an identified portion of a picture, an image captured by a mobile device, a caller ID, a spoken name, etc.). In one scenario, DIR program **300** initiates a response based on the analysis of a time-varying input (e.g., a video, a conversation, variations in a mobile device state, GPS position, music, monitoring of external communication, external energy monitoring, etc.). For example, external energy sources may be thermal, visible light, acceleration variations (e.g., vibrations, impacts, movement of a user carrying a mobile device, etc.), and other types of electromagnetic energy. In some instances, the value of a state of mobile device **120** or the value of the analysis of app information may be a null value or an undefined value. For example, an undefined or null value may be associated with monitoring a device function that is deactivated.

Mobile device morphing (MDM) program **400** implements the one or more responses identified by DIR program **300**. In one embodiment, MDM program **400** determines that the resources associated with the one or more responses identified by DIR program **300** exist on mobile device **120**, and MDM program **400** reconfigures (e.g., morphs) mobile device **120** based on the identified one or more responses. In another embodiment, MDM program **400** determines that one or more resources dictated by the one or more responses do not exist (i.e., are missing) on mobile device **120**. In response to a determination that one or more resources dictated by an identified response are not available on mobile device **120**, MDM program **400** accesses network **110** to locate the one or more missing resources. If MDM program **400** cannot locate the one or more missing resources, MDM program **400** identifies an alternative response associated with the user profile and applies the alternative response to the reconfiguration of mobile device **120**.

FIG. **2** is a flowchart depicting operational steps for profile management program **200** executing on mobile device **120** within distributed data processing environment **100** of FIG. **1**. In one scenario, profile management program **200** stores the user profiles, associated inputs, and responses in a table or database within file storage **124**. In another scenario, profile management program **200** stores the user profiles, associated inputs, and responses in a table or database within remote storage **104** on server **102**. In one embodiment, profile management program **200** obtains an indication of an input from a user. In one scenario, profile management program **200** receives a "hot-key" combination that the next input is used as the basis of a user profile. In another scenario, profile management program **200** receives the input via UI **122**. For example, a user drags a picture from a folder within remote storage **104** on server **102** to the "input" box for a user profile on UI **122** executing on mobile device **120**. Subsequently, profile management program **200** receives a further indication from the user as to which item (e.g., a Hawaiian print shirt) within the picture (e.g., a static input) is designated to trigger a response.

Profile management program **200** identifies one or more responses that a user associates with the input or trigger. For example, the response to a Hawaiian print shirt is defined as display background of mobile device **120** depicting a tropical scene, and the ringtones during the duration of the response change to tropical birdcalls. In another embodiment, profile management program **200** queries a user to determine if additional input(s) are associated with a user profile. For example, profile management program **200** utilizes another input of the system clock and the schedule of a user, which can inhibit the response to a Hawaiian print shirt during scheduled business hours. Other related files, such as ring-tone sounds and background images may reside within file storage **124** or another location (not shown) on mobile device **120**. In another embodiment, the other related files are stored on server **102** in remote storage **104**.

In step **202**, in one embodiment, profile management program **200** provides a user UI **122** through which the user creates and identifies one or more user profiles. In another embodiment, profile management program **200** provides a user UI **122** through which the user modifies an existing profile.

In step **204**, profile management program **200** identifies one or more sources (e.g., device states, actions, software applications, etc.) and one or more inputs (e.g., triggers, thresholds, events) respectively associated with one or more sources. In one embodiment, profile management program **200** receives information from a user via UI **122**, which indicates one or more sources and the respectively associated one or more inputs that are associated with a user profile. In a scenario, profile management program **200** utilizes an image recognition application to identify a generic descriptor or tag for the image captured by the camera function of mobile device **120**. For example, a picture of a monarch or a swallowtail are identified as types of butterflies. "Butterfly" is the generic descriptor or tag that triggers the response defined in a profile that has "butterfly" as an input and camera as a source. In another embodiment, profile management program **200** receives an indication, in real-time, from the user of a resource and an input (e.g., trigger). In one scenario, the user creates a profile in a step-by-step mode (e.g., creating a macro). In another scenario, the user is capturing an event for subsequent incorporation into a user profile. For example, a user is involved in a video conference (e.g., a time-varying input) via mobile device **120**. The user identifies an individual that is speaking to profile management program **200** as a reference for a trigger. Subsequently, the user includes additional information that is associated with the identified speaker and indicates to profile management program **200** that the additional information is displayed in response to voice recognition software or facial recognition software identifying the speaker during subsequent interactions.

In a different embodiment, profile management program **200** determines that UI **122** is the source for one or more inputs. In one scenario, profile management program **200** configures UI **122** to act as a security measure. In one instance, UI **122** acts as a basic authentication interface. In another instance, profile management program **200** may have a "fail security check" profile that executes an incremental backup to remote storage **104** on server **102**. An embodiment of the current invention may subsequently implement a "device wipe" morph on mobile device **120**, removing virtually all apps and data. The "device wipe" morph retains an encrypted version of the current invention on mobile device **120** and a thin-client to permit the user restore full functionality and data to mobile device **120** in the future. In another scenario, profile management program **200** employs the input from UI **122** as a security function that enables two users to exchange functionality. In one instance, two users have stack images and data backed up to remote storage **104** on server **102**. The mobile device of a second user is unavailable. For example, the mobile device of the second user may be out of power, lost, unavailable, or damaged. The user of mobile device **120** invokes a "user swap" morph where both users engage in authentication protocols. The second user retrieves the stack image and data from remote storage **104** on server **102** and effectively converts mobile device **120** into a clone of the mobile device of the second user.

In step **206**, profile management program **200** identifies one or more responses to the one or more inputs. In one embodiment, the identified one or more responses automatically modify aspects of mobile device **120** that a user may accomplish manually. In one scenario, profile management program **200** executes in the background and records the actions of a user as the user manually reconfigures mobile device **120**. Profile management program **200** identifies the steps and the outcome, and designates the steps and the outcome as the response associated with the creation or the modification of a profile. In another scenario, profile management program **200** executes in the foreground and UI **122** is active. For example, UI **122** may present a visual representation of mobile device **120**. A user accesses the file directory of mobile device **120** and selects a file that is subsequently assigned to the background area of the visual (e.g., virtualized) representation of mobile device **120**. Similarly, the user may select the phone function on the visual representation of mobile device **120**, select ring-tone files on mobile device **120**, and respectively associate the selected ring-tone files with the characteristics, IDs, or phone numbers in the phone directory of mobile device **120**.

In decision step **208**, profile management program **200** determines whether additional inputs are identified that are associated with the creation or modification of a profile. If profile management program **200** does not identify an indication that additional inputs are associated with the creation or modification of a profile (no branch, decision step **208**), then profile management program **200** stores the created or modified profile (step **210**). In one embodiment, profile management program **200** stores the created or modified profile in a table (e.g., list, database, etc.) on mobile device **120** in file storage **124**. In another embodiment, profile management program **200** stores the created or modified profile in a table (e.g., list, database, etc.) on server **102** in remote storage **104**.

If profile management program **200** does identify an indication that additional inputs are associated with the creation or modification of a profile (yes branch, decision step **208**), then profile management program **200** loops to step **204**. In one embodiment, profile management program **200** receives an indication from a user that the next source and input is utilized serially to further refine the identification of one or more responses. In another embodiment, profile management program **200** receives an indication from a user that the next source and input is utilized in parallel. In one scenario, a user profile provides a hierarchy of responses. In one instance, morphing responses are sequenced and may be cycled through without terminating a morphing response. In another instance, indications of the multiple morphs are virtualized; however, only the selected morphing response occurs. If another response is selected, the initial morphing response is terminated. In another scenario, a user may create a hybrid morphing response that tiles or segments the viewing area of mobile device **120** where each segment displays a different response.

FIG. **3** is a flowchart depicting operational steps for dynamic input response (DIR) program **300**, executing on mobile device **120** within distributed data processing environment **100** of FIG. **1**. DIR program **300** identifies the current profile (e.g., configuration) of mobile device **120** and responds to user activity, to changes in one or more device states of mobile device **120**, to external inputs (e.g., stimuli) from the environment, and to internal inputs (e.g., network activity, in-coming phone call, etc.). DIR program **300** monitors a plurality of user defined profiles. In one embodiment, DIR program **300** utilizes supervisor **126** or another software program to monitor the various inputs and initiate responses based on information contained within user profiles. In addition, DIR program **300** utilizes supervisor **126** to monitor mobile device **120** for additional inputs that may be linked to the initial one or more responses. Based on one or more inputs or responses, DIR program **300** identifies one or more responses associated with a user profile that subsequently triggers a "morphing" behavior on mobile device **120**. In another embodiment, if DIR program **300** does not identify sufficient information and inputs to identify a morphing response, then DIR program **300** loops. During each loop, DIR program **300** polls the various sources of inputs. The rate of looping and polling may be adjusted to improve energy efficiency.

In step **302**, DIR program **300** identifies the current profile and configuration of mobile device **120**. In one embodiment, DIR program **300** determines the original or default profile and configuration for mobile device **120** (e.g., the profile that is currently operating on mobile device **120**). In one scenario, DIR program **300** stores the default profile or stack in file storage **124**. In another scenario, DIR program **300** clones or creates a backup image for some or all of the stack, operating system, software, and data on mobile device **120** and stores the clone or backup image on remote storage **104**. A backup image facilitates returning mobile device **120** to a known profile once one or more reconfigurations (e.g., morphs) add or remove the operating system or software programs on mobile device **120**.

In step **304**, DIR program **300** monitors one or more mobile device functions and identifies whether events or stimuli associated with the one or more mobile device functions triggers the monitoring of additional mobile device functions. Additionally, a user may override the monitoring or the reaction to the monitored device functions. In one embodiment, DIR program **300** utilizes supervisor **126** to monitor various states (e.g., battery charge-level) and functions of mobile device **120**. In another embodiment, the one or more mobile device functions on mobile device **120** are not limited to the GPS, the accelerometer, the camera, the NFC function, or the keypad. Functional elements of mobile device **120** can include installed software or data transmitted or received by the installed software. In one scenario, DIR program **300** detects the camera of mobile device **120** acquiring a picture. In addition, the user provides another input, for example, a vocal command, which activates an image recognition program. In one instance, DIR program **300** may react to the information provided by the image recognition program. In another instance, DIR program **300** delays reacting to the information provided by the image recognition program until an additional input, defined in a user profile, is identified. In some embodiments, a user predefines overrides. For example, an override may be based on times and dates to prevent monitoring activity or prevent monitoring activity from initiating responses.

In step **306**, DIR program **300** monitors one or more functions of mobile device **120** and scans for additional inputs. In one embodiment, DIR program **300** utilizes the additional inputs to refine which of the plurality of user profiles matches the inputs received by mobile device **120**. Based on the additional inputs, DIR program **300** identifies a user profile that contains one or more responses that are associated with the monitoring data and the additional inputs. In one scenario, DIR program **300** derives the additional inputs from user actions. In another scenario, the additional inputs are based on real-time analysis of information that is received or transmitted by mobile device **120**. In one instance, DIR program **300** analyzes the information that occurs in the environment surrounding mobile device **120**. For example, DIR program **300** utilizes image processing and image recognition of pictures or video captured via the camera on mobile device **120**. In another instance, DIR program **300** applies voice recognition analysis to a conversation received by mobile device **120** via network **110**.

In another embodiment, additional inputs may be controlled by logical operations either to act as a filter or to deactivate some functions or apps as part of an energy management strategy. In a scenario, as the battery charge-level (e.g., trigger, input) of mobile device **120** attains a threshold level, DIR program **300** identifies another response. In one example, DIR program **300** determines that a first threshold level is attained, and the associated response deactivates one or more functions of mobile device **120**. In another example, DIR program **300** determines that a second battery charge-level threshold level is attained by mobile device **120**, and the associated response loads a different stack, which further reduces energy consumption by deactivating one or more cores, reducing the CPU clock speed, and constraining the activation or operation of one or more features or apps.

In decision step **308**, DIR program **300** determines whether a response, which subsequently results in a morphing behavior, is identified. If DIR program **300** identifies a response that results in a morphing behavior (yes branch, decision step **308**), then DIR program **300** subsequently activates MDM program **400**.

In step **310**, DIR program **300** activates MDM program **400**. Additionally, DIR program **300** loops to step **302**. In one embodiment, DIR program **300** loops to step **302** to identify changes in inputs or monitors for additional inputs occurring. In one scenario, DIR program **300** loops in real-time. In another scenario, DIR program **300** delays the loop. For example, DIR program **300** is operating in an energy conservation mode. In a different scenario, DIR program **300** pauses the loop until supervisor **126** detects a user input, for example, a hot-key combination. In another embodiment, MDM program **400** reacts to the initial one or more responses identified by DIR program **300**. Subsequent to MDM program **400** initiating a morphing behavior, based on one or more identified responses, modifications to the profile of mobile device **120** may affect future activities of DIR program **300**. The modifications (e.g., morphs) applied to mobile device **120** may affect the software and functions available for monitoring and scanning for additional inputs or changes to inputs.

Referring to decision step **308**, if DIR program **300** does not identify a response which subsequently results in a morphing behavior (no branch, decision step **308**), then DIR program **300** loops scanning (e.g., polling) mobile device **120** for one or more inputs. In one embodiment, DIR program **300** polls device states of mobile device **120**, such as GPS information, battery charge, charging status, temperature, signal strength, etc. In another embodiment, DIR program **300** polls one or more software applications for information to utilize as one or more inputs.

In step **312**, DIR program **300** determines the polling rate to acquire input (e.g., stimuli) information from monitoring mobile device **120** when at least one response has not been identified. In one embodiment, DIR program **300** monitors various device states (e.g., battery charge, charging condition) of mobile device **120** to determine a polling rate. In one scenario, DIR program **300** varies the polling rate based on the battery charge of mobile device **120**. In one instance, mobile device **120** is connected to a charger, permitting the polling rate to be enhanced. In another instance, as the battery charge of mobile device **120** decreases, DIR program **300** may reduce the rate of polling to reduce energy consumption. In another scenario, DIR program **300** reduces or suspends polling based on the detection of an external input or a change on mobile device **120**. For example, mobile device **120** is transported into a secured environment (e.g., workplace, communication suppression area, etc.). In another example, the user activates encryption on mobile device **120**.

FIG. **4** is a flowchart depicting operational steps for mobile device morphing (MDM) program **400** executing on mobile device **120** within distributed data processing environment **100** of FIG. **1**. Mobile device morphing (MDM) program **400** applies user-defined responses, based at least in part, on one or more inputs that are defined to trigger one or more responses. MDM program **400** implements the one or more responses identified by DIR program **300**. In one embodiment, MDM program **400** determines whether mobile device **120** includes the resources associated with the one or more responses (identified by DIR program **300**), and MDM program **400** reconfigures (e.g., morphs) mobile device **120** based on the identified one or more responses. In another embodiment, MDM program **400** determines that one or more resources dictated by the one or more responses are not included within mobile device **120**, and MDM program **400** downloads the one or more dictated (e.g., missing) resources via network **110**. MDM program **400** subsequently morphs mobile device **120** when the downloaded resources are available.

The types of responses (e.g., morphs) range from adjusting to background and ring-tones of the mobile device to matching the style of the wardrobe of a user to reconfiguring a majority (e.g., stack, the operating system, the installed applications, the telecommunication service provider, the GUI layout, etc.) of the mobile device **120**. In some embodiments, if MDM program **400** cannot download the one or more of the dictated resources, then MDM program **400** applies an alternative response. In one scenario, MDM program **400** reconfigures mobile device **120** based on the alternative response. In another scenario, MDM program **400** does not identify an alternative response and may respond with a null response. For example, the null response may leave the configuration of mobile device **120** unchanged. In another example, the null response reverts mobile device **120** to a default configuration or profile.

In step **402**, MDM program **400** retrieves the one or more responses identified by DIR program **300** (in step **306**) based on one or more inputs from a table. In one embodiment, a table comprised of a plurality of user profiles, inputs (e.g., trigger, thresholds, etc.), and responses resides within file storage **124** on mobile device **120**. In another embodiment, a table comprised of a plurality of user profiles, inputs (e.g., trigger, thresholds, etc.), and responses resides within remote storage **104** on server **102**.

In decision step **404**, MDM program **400** determines whether the resources associated with the one or more responses identified by DIR program **300** are included (e.g., exists) on mobile device **120**. In response to a determination that the resources associated with the one or more responses identified by DIR program **300** are not included (e.g., are missing) on mobile device **120** (no branch, decision step **404**), then MDM program **400** locates the resources missing from mobile device **120** that are dictated by the one or more identified responses. In an embodiment, MDM program **400** subsequently downloads the missing resources. In one scenario, files, including image or backup files, are stored on server **102** in remote storage **104**. In another scenario, MDM program **400** determines the location of one or more resources, dictated by the one or more responses identified by DIR program **300**, at least in part, on the information associated with a user profile, and one or more systems accessible via network **110** (e.g., the Internet, website of a software supplier, etc.). In a different embodiment, information associated with a response is located within file storage **124** on mobile device **120**.

In step **406**, MDM program **400** downloads one or more resources that are not included on mobile device **120**, as dictated by the one or more responses identified by DIR program **300**. In one embodiment, MDM program **400** downloads the one or more resources not available on mobile device **120**. In one instance, the one or more missing resources is located on server **102**. In another instance, the missing one or more resources is located on the Internet (accessible via network **110**). In another embodiment, MDM program **400** determines that one or more resources dictated by the one or more responses identified by DIR program **300** cannot be downloaded. In one scenario, mobile device **120** experiences a loss of network connectivity. In one instance, MDM program **400** contacts the user via UI **122** to determine if the user delays the identified response until the missing resource is downloaded. In another instance, MDM program **400** receives an indication from the user to proceed without the missing resource. In another scenario, mobile device **120** does not experience a network connectivity problem, and MDM program **400** does not find at least one of the missing resources dictated by the one or more responses identified by DIR program **300**. In a different embodiment, MDM program **400** recovers or retrieves the missing resources from file storage **124** or another persistent storage location (not shown) on mobile device **120**.

Referring to decision step **404**, in response to determining that the resources associated with the one or more responses identified by DIR program **300** are included on mobile device **120** (yes branch, decision step **408**), MDM program **400** continues to decision step **408**.

In decision step **408**, MDM program **400** determines whether resources associated with the one or more responses are available. In response to a determination that the resources associated with the one or more responses dictated by DIR program **300** are available (yes branch, decision step **408**), MDM program **400** reconfigures (e.g., morphs) mobile device **120**. In one embodiment, the resources reside within mobile device **120**. In a different embodiment, one or more resources are accessed via network **110**. In one scenario, the one or more resources are stored in volatile memory on mobile device **120** for the duration of the one or more responses identified by DIR program **300**. In one instance, MDM program **400** signals the user, via UI **122**, for a determination whether the resources in volatile memory are stored for subsequent usage, for example on remote storage **104**. In another instance, MDM program **400** releases the resource in volatile memory if a new response (e.g., reconfiguration) initiates that does not require the resource in volatile memory. In another scenario, one or more resources are dynamically accessed via network **110**. For example, the dynamically accessed resource may be a streaming video or other multi-media form.

In step **412**, MDM program **400** reconfigures (e.g., morphs) mobile device **120**. In one embodiment, MDM program **400** reconfigures mobile device **120** based on the one or more responses identified by DIR program **300**. In another embodiment, the reconfiguration of mobile device **120** includes a stack change. In one scenario, the current stack or stack image is uploaded to remote storage **104** on server **102** prior to reconfiguring mobile device **120**. In another scenario, mobile device **120** has sufficient persistent storage to permit the secure storage of the current stack or the stack image on mobile device **120**. In a different embodiment, mobile device **120** locates accessible storage space on a device that exists locally (e.g., a portion of the intranet or Internet of "things") to upload the current stack, stack image, or some apps and data. In a scenario, various stacks are stored on mobile device **120** to maintain the configuration of a user; however, different stacks are instituted as responses to energy management profiles. A further embodiment provides for mobile device **120** off-loading some processing requirements to another locally accessible device to conserve energy.

Referring to decision step **408**, in response to determining that one or more resources associated with the one or more responses identified by DIR program **300** are not available (no branch, decision step **408**), MDM program **400** identifies an alternative response for mobile device **120** in step **410**.

In step **410**, MDM program **400** identifies an alternative response (e.g., configuration, profile, etc.) from a table or database within file storage **124** on mobile device **120**. In some embodiments, the table or database containing the response is located in remote storage **104** on server **102**. In one embodiment, the alternate response may be a null response and mobile device **120** maintains the current device configuration. In another embodiment, MDM program **400** determines which aspects of the one or more responses identified by DIR program **300** can initiate without the availability of one or more resources. In a different embodiment, MDM program **400** may identify the null response as initiating profile management program **200**, such that a user can identify an alternate response for the resources currently available.

In step **412**, MDM program **400** reconfigures mobile device **120** based on the alternative response identified. In one embodiment, MDM program **400** identifies the null response. In one scenario, mobile device **120** is set to a default profile and configuration, and MDM program **400** does not initiate a change to the configuration or profile of mobile device **120**. In another scenario, mobile device **120** is in a non-default configuration or profile. For example, MDM program **400** had previously initiated a reconfiguration (e.g., activated a morph) based on one set of input values corresponded to a response for which the one or more resources was available. Subsequent inputs trigger DIR program **300** to identify a different one or more responses respectively causing MDM program **400** to determine another set of resources, one of which one or more are unavailable, associated with the different one or more responses. In one instance, MDM program **400** reverts mobile device **120** to the default configuration and profile. In another instance, MDM program **400** selects a different alternate response. For example, MDM program **400** may maintain the previous profile for mobile device **120**.

FIG. **5** depicts computer system **500**, which is representative of server **102** and mobile device **120**. Computer system **500** is an example of a system that includes software and data **512**. Computer system **500** includes processor(s) **501**, cache **503**, memory **502**, persistent storage **505**, communications unit **507**, input/output (I/O) interface(s) **506**, and communication fabric **504**. Communications fabric **504** provides communications between cache **503**, memory **502**, persistent storage **505**, communications unit **507**, and input/output (I/O) interface(s) **506**. Communications fabric **504** can be implemented with any architecture designed for passing data and/or control information between processors (such as microprocessors, communications and network processors, etc.), system memory, peripheral devices, and any other hardware components within a system. For example, communications fabric **504** can be implemented with one or more buses or a crossbar switch.

Memory **502** and persistent storage **505** are computer readable storage media. In this embodiment, memory **502** includes random access memory (RAM). In general, memory **502** can include any suitable volatile or non-volatile computer readable storage media. Cache **503** is a fast memory that enhances the performance of processor(s) **501** by holding recently accessed data, and data near recently accessed data, from memory **502**.

Program instructions and data used to practice embodiments of the present invention may be stored in persistent storage **505** and in memory **502** for execution by one or more of the respective processors **501** via cache **503**. In an embodiment, persistent storage **505** includes a magnetic hard disk drive. Alternatively, or in addition to a magnetic hard disk drive, persistent storage **505** can include a solid state hard drive, a semiconductor storage device, read-only memory (ROM), erasable programmable read-only memory (EPROM), flash memory, or any other computer readable storage media that is capable of storing program instructions or digital information.

The media used by persistent storage **505** may also be removable. For example, a removable hard drive may be used for persistent storage **505**. Other examples include optical and magnetic disks, thumb drives, and smart cards that are inserted into a drive for transfer onto another computer readable storage medium that is also part of persistent storage **505**. Software and data **512** are stored in persistent storage **505** for access and/or execution by one or more of the respective processors **501** via cache **503** and one or more memories of memory **502**. With respect to server **102**, software and data **512** includes remote storage **104**, and other programs and data (not shown). With respect to mobile device **120**, software and data **512** includes user interface (UI) **122**, graphical user interface (GUI) not shown, file storage **124**, supervisor function **126**, profile management program **200**, dynamic input response (DIR) program **300**, and mobile device morphing (MDM) program **400**.

Communications unit **507**, in these examples, provides for communications with other data processing systems or devices, including resources of server **102** and mobile device **120**. In these examples, communications unit **507** includes one or more network interface cards. Communications unit **507** may provide communications through the use of either or both physical and wireless communications links. Program instructions and data used to practice embodiments of the present invention may be downloaded to persistent storage **505** through communications unit **507**.

I/O interface(s) **506** allows for input and output of data with other devices that may be connected to each computer system. For example, I/O interface **506** may provide a connection to external devices **508** such as a keyboard, keypad, a touch screen, and/or some other suitable input device. External devices **508** can also include portable computer readable storage media such as, for example, thumb drives, portable optical or magnetic disks, and memory cards. Software and data used to practice embodiments of the present invention can be stored on such portable computer readable storage media and can be loaded onto persistent storage **505** via I/O interface(s) **506**. I/O interface(s) **506** also connect to display device **509**.

Display device **509** provides a mechanism to display data to a user and may be, for example, a computer monitor. Display **509** can also function as a touch screen, such as the display of a tablet computer or a smartphone.

The programs described herein are identified based upon the application for which they are implemented in a specific embodiment of the invention. However, it should be appreciated that any particular program nomenclature herein is used merely for convenience, and thus the invention should not be limited to use solely in any specific application identified and/or implied by such nomenclature.

The present invention may be a system, a method, and/or a computer program product. The computer program product may include a computer readable storage medium (or media) having computer readable program instructions thereon for causing a processor to carry out aspects of the present invention.

The computer readable storage medium can be a tangible device that can retain and store instructions for use by an instruction execution device. The computer readable storage medium may be, for example, but is not limited to, an electronic storage device, a magnetic storage device, an optical storage device, an electromagnetic storage device, a semiconductor storage device, or any suitable combination of the foregoing. A non-exhaustive list of more specific examples of the computer readable storage medium includes the following: a portable computer diskette, a hard disk, a random access memory (RAM), a read-only memory (ROM), an erasable programmable read-only memory (EPROM or Flash memory), a static random access memory (SRAM), a portable compact disc read-only memory (CD-ROM), a digital versatile disk (DVD), a memory stick, a floppy disk, a mechanically encoded device such as punch-cards or raised structures in a groove having instructions recorded thereon, and any suitable combination of the foregoing. A computer readable storage medium, as used herein, is not to be construed as being transitory signals per se, such as radio waves or other freely propagating electromagnetic waves, electromagnetic waves propagating through a waveguide or other transmission media (e.g., light pulses passing through a fiber-optic cable), or electrical signals transmitted through a wire.

Computer readable program instructions described herein can be downloaded to respective computing/processing devices from a computer readable storage medium or to an external computer or external storage device via a network, for example, the Internet, a local area network, a wide area network and/or a wireless network. The network may comprise copper transmission cables, optical transmission fibers, wireless transmission, routers, firewalls, switches, gateway computers and/or edge servers. A network adapter card or network interface in each computing/processing device receives computer readable program instructions from the network and forwards the computer readable program instructions for storage in a computer readable storage medium within the respective computing/processing device.

Computer readable program instructions for carrying out operations of the present invention may be assembler instructions, instruction-set-architecture (ISA) instructions, machine instructions, machine dependent instructions, microcode, firmware instructions, state-setting data, or either source code or object code written in any combination of one or more programming languages, including an object oriented programming language such as Smalltalk, C++ or the like, and conventional procedural programming languages, such as the "C" programming language or similar programming languages. The computer readable program instructions may execute entirely on the user's computer, partly on the user's computer, as a stand-alone software package, partly on the user's computer and partly on a remote computer or entirely on the remote computer or server. In the latter scenario, the remote computer may be connected to the user's computer through any type of network, including a local area network (LAN) or a wide area network (WAN), or the connection may be made to an external computer (for example, through the Internet using an Internet Service Provider). In some embodiments, electronic circuitry including, for example, programmable logic circuitry, field-programmable gate arrays (FPGA), or programmable logic arrays (PLA) may execute the computer readable program instructions by utilizing state information of the computer readable program instructions to personalize the electronic circuitry, in order to perform aspects of the present invention.

Aspects of the present invention are described herein with reference to flowchart illustrations and/or block diagrams of methods, apparatus (systems), and computer program products according to embodiments of the invention. It will be understood that each block of the flowchart illustrations and/or block diagrams, and combinations of blocks in the flowchart illustrations and/or block diagrams, can be implemented by computer readable program instructions.

These computer readable program instructions may be provided to a processor of a general purpose computer, special purpose computer, or other programmable data processing apparatus to produce a machine, such that the instructions, which execute via the processor of the computer or other programmable data processing apparatus, create means for implementing the functions/acts specified in the flowchart and/or block diagram block or blocks. These computer readable program instructions may also be stored in a computer readable storage medium that can direct a computer, a programmable data processing apparatus, and/or other devices to function in a particular manner, such that the computer readable storage medium having instructions stored therein comprises an article of manufacture including instructions which implement aspects of the function/act specified in the flowchart and/or block diagram block or blocks.

The computer readable program instructions may also be loaded onto a computer, other programmable data processing apparatus, or other device to cause a series of operational steps to be performed on the computer, other programmable apparatus or other device to produce a computer implemented process, such that the instructions which execute on the computer, other programmable apparatus, or other device implement the functions/acts specified in the flowchart and/or block diagram block or blocks.

The flowchart and block diagrams in the Figures illustrate the architecture, functionality, and operation of possible implementations of systems, methods, and computer program products according to various embodiments of the present invention. In this regard, each block in the flowchart or block diagrams may represent a module, segment, or portion of instructions, which comprises one or more executable instructions for implementing the specified logical function(s). In some alternative implementations, the functions noted in the block may occur out of the order noted in the figures. For example, two blocks shown in succession may, in fact, be executed substantially concurrently, or the blocks may sometimes be executed in the reverse order, depending upon the functionality involved. It will also be noted that each block of the block diagrams and/or flowchart illustration, and combinations of blocks in the block diagrams and/or flowchart illustration, can be implemented by special purpose hardware-based systems that perform the specified functions or acts or carry out combinations of special purpose hardware and computer instructions.

The descriptions of the various embodiments of the present invention have been presented for purposes of illustration, but are not intended to be exhaustive or limited to the embodiments disclosed. Many modifications and variations will be apparent to those of ordinary skill in the art without departing from the scope and spirit of the invention. The terminology used herein was chosen to best explain the principles of the embodiment, the practical application or technical improvement over technologies found in the marketplace, or to enable others of ordinary skill in the art to understand the embodiments disclosed herein.

What is claimed is:

1. A method for dynamically modifying a mobile device, the method comprising:

identifying, by one or more computer processors, a plurality of profiles on a mobile device;

receiving, by one or more computer processors, one or more inputs on the mobile device;

identifying, by one or more computer processors, at least one trigger that corresponds to the received one or more inputs, wherein the at least one trigger is associated with at least one profile of the plurality of profiles;

determining, by one or more computer processors, if the at least one trigger activates a response, based at least in part, on data included in the at least one profile that is associated with the at least one trigger;

wherein the identified at least one trigger includes a first trigger, the first trigger is associated with a battery power level of the mobile device indicating a first threshold;

in response to determining that the first trigger associated with the battery power level of the mobile device attains the first threshold, activating, by one or more computer processors, a first response in an energy management profile within the plurality of profiles;

determining, by one or more computer processors, that the first trigger associated with the battery power level of the mobile device attains a second threshold; and

in response to determining that the first trigger associated with the battery power level of the mobile device attains the second threshold, activating, by one or more computer processors, a second response in the energy manage profile, wherein the second response includes replacing, by one or more computer processors, a first hardware and software configuration of the mobile device with a second hardware and software configuration associated with the mobile device, and wherein the second hardware and software configuration consumes battery power at a different rate than the first hardware and software configuration on the mobile device; and

in response to determining that the at least one trigger activates a response, applying, by one or more computer processors, the response to the mobile device.

2. The method of claim **1**, wherein the first response of an energy management profile includes at least one of deactivating one or more features of the mobile device and modifying one or more features of the mobile device.

3. The method of claim **1**, wherein the first response of an energy management profile includes at least one of deactivating one or more software application on the mobile device and modifying one or more software applications on the mobile device.

4. The method of claim **1**, further comprising:

receiving, by one or more computer processors, a second input, wherein the second input is associated with a mobile device profile;

identifying, by one or more computer processors, a third hardware and software configuration within a plurality of hardware and software configurations accessible by the mobile device, which is associated with the received second input and a second user;

downloading, by one or more computer processors, the third hardware and software configuration from the plurality of hardware and software configurations, wherein the plurality of hardware and software configurations includes hardware and software configurations of the user, the second user, and other mobile device users; and

applying, by one or more computer processors, the downloaded third hardware and software configuration to the mobile device.

5. The method of claim **1**, further comprising:

identifying, by one or more computer processors, a group of profiles within the plurality of profiles on the mobile device, wherein the members of the group of profiles contain the identified at least one trigger and one or more additional triggers;

determining, by one or more computer processors, a second profile, wherein the second profile is the member of the group of profiles which contains the at least one trigger, and the one or more additional triggers;

identifying, by one or more computer processors, a second response associated with the second profile, wherein the second response is based, at least in part, on the at least one trigger and the one or more additional triggers; and

activating, by one or more computer processors, the second response on the mobile device.

6. The method of claim **1**, wherein the identified at least one trigger is based, at least in part, on analyzing visual input to the mobile device, wherein the visual input includes video inputs or picture inputs.

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