An interactive toy object apparatus having a toy body that includes a plurality of object body portions, an object control circuit secured to the body that includes an object processor, an object memory device, and one or more object transceivers, a plurality of object inputs and object outputs secured to one or more of the object body portions and in communication with the object control circuit; and a first control program stored in the object memory device and operable by the object processor, wherein the interactive object is capable of communicating with a controller, via the one or more object transceivers, to receive or transmit at least one of commands, inputs, and outputs, therebetween.
Press app launcher button

Touch the object to the device to pair via NFC

Press "connect" button to pair device with object

Object found?

See message on screen indicating no object to connect

See avatar of object on screen and various selection buttons

See LEDs illuminate green on object

Hear sound played on speaker of object

See "A"

See "B"

FIG. 5
Press “Sing Songs” button

Display sub-menu selections, e.g., listing of available songs for selection, “Save Songs” button, and “Download New Songs” button

Press “Download New Songs” button

Display songs, stories and/or apps available on online store on the controller display

Select from songs and/or new apps to download to device

Illuminate LEDS blue on object

Illuminate LEDS green on object

Press button of one song and assign to one hand or foot

Press button to select one of the songs on the list

Play sound through speaker on object

Play animation on device screen

Play short “giggle” track when song is complete

Illuminate LEDS green on object

Illuminate LEDS green on object

Illuminate hand or foot LED red on screen

Illuminate hand or foot LED red on object

Iterate?

Yes

No

[FIG. 7]
Press switch in hand or foot of object

Play the assigned song through speaker on object

Play short "giggle" track when song is complete

Yes

Iterate?

Display avatar of object with red and/or green lights on the hands and feet on screen

Illuminate LEDs red and/or green on object

END

FIG. 7
Press "Read Story" button

Display story selection screen with list of available stories

Select a story and press play

Display animation on screen

Play soundtrack on object speakers

Illuminate LEDs blue on object

Additional page? No

Press "next page" button on screen

See option available on story selection screen

Press "Record Story Voices" button

Display record home screen with list of available stories

Press record for one story

Read the story from screen and speak into the device

FIG. 8
Receive command to load application

Controller displays home screen with selection buttons and home screen music is played

"Connect" button is selected

Automatic pairing with object occurs via BT or NFC

Display pairing failed

Controller pairs with object?

Yes

Controller displays avatar of object, transmits commands to object to announce pairing

See "A"  See "B"  See "C"  See "D"  See "E"  See "F"

FIG. 9
Display "Sing Songs" button

Receive button press

Display song list screen with play buttons for each song and display "Download New Songs" button

Receive button press for song play

Multiple objects?

Yes

Transmit sound track to object speaker on additional objects

Display animation of additional object avatars on device screen

No

Transmit sound track to object speaker

Transmit command to object to illuminate LEDs blue on object

Sound track ends

Transmit "giggle" track to object(s)

"Giggle" track ends return to song list screen

Initiate command to open internet window to Online Store

Receive newly downloaded file and store new file in the "library" and add to playlist Options

Display animation on device screen with object avatar

Transmit command illuminate LEDs green on object

Return to Step 706

FIG. 10
Display "Store Songs" to object Button

Receive input from button press

Display song storage screen and list of songs

Multiple objects

Yes

Prompt to select one object

No

Display avatar of toy on screen with green light on hands and feet of avatar

Transmit command illuminate LEDs green in hands and feet of object

Receive button press of one song in the list

Initialize prompt for user to assign to a body portion

Receive button press of one body portion and transmit sound file to object memory

Assign tag to link sound file to one switch in selected body portion

FIG. 11
FIG. 12

Display "Read Story" button on screen

Receive input from button press

Display story selection home screen and display "Download new stories" button, and "Record story voices" button, and "Story selection list" button

Receive input from "Story selection list" button

Display list of available stories with play buttons next to each

Receive button press to play one of the stories

Multiple objects?

Yes

Transmit sound track to object speakers

Transmit command to illuminate LEDs blue

No

Display animation of story page on screen

Initialize prompt for user to select one object

Additional pages?

Yes

No

Go to "G"

Receive input from button press

Go to "H"

Display "next page" button on screen

Receive input from press of switch in stomach

Initiate command for next animation
Receive input from "Record Story Voices" button on screen

Display record home screen with list of available stories with record button for each

Receive input from button press for one story

Display animation of story page on screen (includes text for story)

Initiate microphone on function on controller

Additional pages?

No

Initiate command to save audio to controller memory and add file to listing in available stories

Yes

Display "next page" button on screen

Return to story home screen

Initiate command for next animation

Receive input from button press

FIG. 13
Receive "upside-down" orientation position input from accelerometer

Transmit sound track to speaker on object

Transmit command to illuminate LEDs red

END

FIG. 14

Receive input from tactile switch in stomach of object

Transmit sound track to speaker on object

Transmit command to illuminate LEDs red

END

FIG. 15
Receive input from tactile switch in hand or foot of object

Audio track stored?

No

No action taken

Yes

Access stored song assigned to that switch from object

Transmit song track from toy memory to object speaker

Song track ends

Transmit command to illuminate LEDs blue

"Giggle" track ends

Transmit "giggle" track from toy memory to object memory to object

Transmit command from object memory to illuminate LEDs green

FIG. 16
METHOD AND APPARATUS FOR INTERACTIVE PLAY

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] The present Application is a non-provisional application and claims the benefit of U.S. provisional patent application No. 61/754,769 having the same title as the present Application and filed on Jan. 21, 2013, of which the present Application hereby incorporates by reference in its entirety.

FIELD

[0002] The method and apparatus relate to interactive objects, more particularly, interactive toys.

BACKGROUND

[0003] Various types of toys are available for play with a user, such as a child. The interaction of these toys with the user has traditionally been limited to actions performed by the toy in response to an action of the user. For example, pushing a specific spot on a stuffed animal can initiate an action such as a sound or movement. Typically, the toy includes a basic circuit that receives a hard input from a user and responds in a pre-programmed manner with a hard output. Such limited interactive capabilities with a user, particularly a child, can lead to rapid boredom and subsequent non-use of the toy.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] Embodiments of the method and apparatus are disclosed with reference to the accompanying drawings and are for illustrative purposes only. The method and apparatus are not limited in its application to the details of construction or the arrangement of the components illustrated in the drawings. The method and apparatus are capable of other embodiments or variations practiced or carried out in other various ways. In the drawings:

[0005] FIG. 1 illustrates a perspective view of an exemplary interactive object;
[0006] FIG. 2 illustrates a perspective view of an exemplary controller;
[0007] FIG. 3A illustrates a schematic view of an exemplary object control circuit in communication with object inputs and object outputs;
[0008] FIG. 3B illustrates a schematic view of another exemplary object control circuit in communication with object inputs and object outputs;
[0009] FIG. 4 illustrates a schematic view of an exemplary controller in communication with controller inputs and controller outputs;
[0010] FIG. 5 is a flow chart that represents an exemplary pairing process from a user perspective;
[0011] FIG. 6 is a flow chart that represents an exemplary process related to a user’s selection of a “sing song” button;
[0012] FIG. 7 is a continuation of the process shown in FIG. 6;
[0013] FIG. 8 is a flow chart that represents an exemplary process related to a user’s selection of a “read story” button;
[0014] FIG. 9 is a flow chart that represents an exemplary pairing process from an apparatus perspective;
[0015] FIG. 10 is a flow chart that represents an exemplary process related to an input from a featured selection button;
[0016] FIG. 11 is a flow chart that represents an exemplary process related to an input from another featured selection button;
[0017] FIG. 12 is a flow chart that represents an exemplary process related to an input from an additional featured selection button;
[0018] FIG. 13 is a flow chart that represents an exemplary process related to an input from a further featured selection button;
[0019] FIG. 14 is a flow chart that represents an exemplary process related to an object input;
[0020] FIG. 15 is a flow chart that represents an exemplary process related to another object input; and
[0021] FIG. 16 is a flow chart that represents an exemplary process related to another object input.

BRIEF SUMMARY

[0022] In at least some embodiments, the method and apparatus for interactive play relates to an apparatus that includes, a controller comprising, a controller processor, a controller memory device, a communication device, a controller display screen, one or more controller transceivers, and a first control program resident in the controller memory device and operable by the controller processor. In addition, the apparatus includes, an interactive object comprising, an object control circuit, an object processor, object memory device, one or more object transceivers, and a second control program resident in the object memory device and operable by the object processor, wherein, the controller is capable of communicating with the interactive object, via the transceivers, to receive and transmit at least one of commands, inputs, and outputs, therebetween.

[0023] In additional embodiments, the method and apparatus for interactive play relates to an interactive toy object apparatus having a body that includes a plurality of object body portions; an object control circuit secured to the body that includes an object processor, an object memory device, and one or more object transceivers; a plurality of object inputs and object outputs secured to one or more of the object body portions and in communication with the object control circuit; and a first control program stored in the object memory device and operable by the object processor, wherein the interactive object is capable of communicating with a controller, via the one or more object transceivers, to receive or transmit at least one of commands, inputs, and outputs, therebetween.

[0024] In other embodiments, the method and apparatus for interactive play relates to a method of interactive play with a toy that includes providing a toy object that includes a toy body and an object control circuit secured to the body that includes an object processor, an object memory device, and at least one communication device; activate one of a plurality of object inputs secured to one of a plurality of object body portions forming the toy body; and play an audio track stored in the object memory device via one or more object outputs secured to one or more of the body portions, wherein the audio track is assignble to be activated by one or more of the object inputs.

[0025] In further additional embodiments, the method and apparatus for interactive play relates to a method of interactive play with a toy that includes providing a controller having a display screen, a controller processor, a controller memory, and a wireless controller transceiver, wherein the controller is configured to communicate with a toy object via the control-
ler transceiver, and displaying on the display screen a plurality of selections that include one or more of selecting an audio track from a library of audio tracks in the controller memory, downloading an audio track for storage in the controller memory, and recording an audio track for storage in the controller memory.

[0026] Other embodiments, aspects, features, objectives and advantages of the method and apparatus will be understood and appreciated upon a full reading of the detailed description and the claims that follow.

DETAILED DESCRIPTION

[0027] Referring to FIG. 1, an exemplary interactive object 102 is illustrated. In at least some embodiments, as shown in FIG. 1, the interactive object 102 can include a stuffed animal toy (e.g., plush teddy bear). Further embodiments of the interactive object 102 can include any one of various objects, for example, dolls, action figures, plastic figures, toy vehicles, etc. The interactive object 102 can be made of various materials, such as plastic, cloth, stuffing, etc. The interactive object 102 is configured to interact with a user, either alone, or in combination with a wired and/or wireless controller 104. In at least some embodiments, as shown in FIG. 2, the controller 104 can include a mobile device, such as a mobile phone, tablet, laptop computer, etc. Further embodiments of the controller 104 can include any one of various non-mobile devices as well, such as a desktop computer. A first control program 190 and/or first control program interface 197 is installed on and operated by the controller 104 to initiate actions to be principally performed by the interactive object 102. In addition, a second control program 198 is installed on and operated by the interactive object 102 to receive and execute instructions received from the controller 104, and to receive and transmit instructions from the interactive object 102 to the controller 104. In addition, the second control program 198 facilitates communication from various object inputs 120 and object outputs 122 and can also function independently of the controller 104.

[0028] The interactive object 102 illustrated in FIG. 1 includes a toy body 103 having a body interior 111 and a body exterior 116, and further including various object body portions 119, such as feet 105, arms 106, hands 107, legs 108, head 110, chest 112, ears 114, stomach 115, etc., that can include cavities therein for the installation of devices, circuit boards, batteries, etc. Any one of these, or other portions of the interactive object 102, can be utilized for operation with the object inputs 120 and the object outputs 122, as discussed further below. The object inputs 120 and object outputs 122 are in communication with an object control circuit 124. The object control circuit 124 includes electrical components and wiring that is utilized to operate the interactive object 102. In at least some embodiments, the object control circuit 124 includes one or both of integrated circuits and discrete components, mounted together on a printed circuit board (PCB), or mounted on multiple PCBs, or other fixed locations about the interactive object 102. As shown in FIG. 3A, an exemplary object control circuit 124 can further include a power supply 126, a processor-based PCB 128 having an object processor 129 and in communication with an input/output (I/O) PCB 130, one or more object transceivers 132, and an object memory device 134.

[0029] Referring to FIG. 3B, another exemplary object control circuit 124 can include a main PCB with the power supply 126 mounted thereon or wired thereto an object processor 129 (e.g., an 8-Bit Host Microprocessor), an object memory device 134, one or more object transceivers 132 (e.g., Bluetooth transceiver 135, near-field-communication (NFC) transceiver 137, etc.), input/output connection block 138, sound card 140, and a media card input 142 (e.g., SD card reader, Memory Stick reader, USB slot, embedded Flash memory, etc.). The Bluetooth transceiver 135 can include, for example, a Bluetooth Radio, such as Bluetooth Radio 4.0 with Bluetooth Low Energy technology, and a Bluetooth Dongle.

[0030] Referring again to FIGS. 3A and 3B, various object inputs 120 and object outputs 122 can be in communication with the object control circuit 124. Object inputs 120 can include numerous types of sensors switches (e.g., tactile, pressure, proximity, conductivity, magnetic, etc.). For example, tactile sensor 150, an accelerometer 152 (e.g., a tri-axial accelerometer 152 for tilt and shock sensing), a gyroscope 154, toggle-style switches 156, object microphones 158, etc. The object inputs 120 are included to allow for interaction with a user, such that when the interactive object 102 is manipulated by the user, the object inputs 120, one or more of various actions and responses are initiated by the interactive object 102. The object outputs 122 respond to the instructions from the object control circuit 124 as processed by the second control program 198, which can also receive instructions from the first control program 190, via the controller 104. The object outputs 122 can include numerous types of devices, for example, body lights (e.g., light emitting diodes (LEDs)) 160, object speakers 162, vibration motors 164, etc. One or more of the various object inputs 120 and object outputs 122 can be located with the object control circuit 124 on a PCB, or otherwise positioned on the inside or outside of the interactive object 102.

[0031] Referring again to FIG. 1, in at least some embodiments, the interactive object 102 is a stuffed bear with various object body portions 119, such as hands 107, feet 105, ears 114, head 110, chest 112, and stomach 115. Body lights 160 are positioned in or on various object body portions 119. In addition, sensors 150 are positioned in or on one or more of the object body portions 119 and an accelerometer 152 can be placed in an interior cavity (not shown) of the bear. Many components, such as the power supply 126, object control circuit 124, object inputs 120, and object outputs 122 are installed in cavities (not shown) residing in the object body portions 119. The object control circuit 124, along with associated wiring to and from the object inputs 120 and object outputs 122, would likewise be positioned in an interior cavity. The interactive object 102 can further include lenses 170 situated over the body lights 160. Although the cavities of the object body portions 119 are not shown, they are understood to reside inside the interactive object 102.

[0032] Referring to FIGS. 2 and 4, the controller 104 can be a mobile device, such as a smartphone or smart device (e.g., IPHONE, IPAD, GALAXY S3, etc.), that includes various components commonly known and customarily provided in numerous mobile devices. The components can include one or more controller transceivers 133 (e.g., Bluetooth transceiver 135, near-field-communication (NFC) transceiver 137, etc.), a controller processor 131 (e.g., a microprocessor, microcomputer, application-specific integrated circuit, etc.), a controller memory device 199, a user interface 196, one or more controller outputs 194, and one or more controller inputs 193 that contribute to the user interface 196. The one or more controller inputs 193 can include for example, control-
The controller 104 includes the first control program 190 and/or first control program interface 197, which reside on the controller 104 to initiate actions to be performed by the interactive object 102. In addition, the second control program 198 resides on the interactive object 102 to receive and execute instructions received from the controller 104, as well as to receive and transmit instructions from the interactive object 102 to the controller 104. When the first control program 190 is resident on the controller 104, the control program interface 197 is not required. If the first control program 190 is not resident on the controller 104, but merely accessed by the controller 104 for operation, then the first control program interface 197 is resident on the controller 104 to facilitate communication with the first control program 190 installed on another device/source.

The first control program 190 is, in at least some embodiments, a software application. The software application can be configured to run on various types of controllers 104. The type of controller 104 typically determines the operating system utilized. For example, the first control program 190 can be configured to operate on one or more of IOS, ANDROID, and WINDOWS 8 operating systems. In at least some embodiments, the first control program 190 is installed directly into the memory of the controller 104. Installation of the first control program 190 can be performed utilizing one of many installation methods. For example, the first control program 190 can be downloaded via wired or wireless communication, with Internet stores such as GOOGLE PLAY, APP STORE, WINDOWS STORE, etc. Once downloaded, the first control program 190 resides on the controller 104 and can be configured for communication with the interactive object 102. The interfacing and operation of the controller 104 and the interactive object 102 can be performed in numerous manners. At least one exemplary embodiment is illustrated in the flow charts found in FIGS. 5-8, as described below.

The first control program 190 includes various screen views that are configured to include arrangements of selection buttons 113 and other objects, such as an avatar 211, for display on the controller display screen 180 of the controller 104. Through selection or other manipulation of the controller 104 by a user, various different screen views can be displayed offering new, old, or modified selections (e.g., selection buttons 113). The first control program 190 includes a home screen 127 that displays an avatar 211 of the interactive object 102 and a first set of selection buttons 113, whose identifier or value can dynamically change based on user selections. It is to be further understood that the term selection button 113 can include any one of the identified buttons in the process steps listed below.

Referring to FIG. 5, the process begins after the first control program 190 has been installed onto the controller 104, either by downloading it onto the controller 104, or via another known method, and the interactive object 102 is powered and ready to receive a communication from the controller 104. FIG. 5 represents an exemplary pairing process. The application can be launched on the controller 104 in step 200 by selecting an option displayed on the controller 104. Once the application is initialized, a home screen 127 for the first control program 190 can be displayed on the controller display screen 180 of the controller 104. If the interactive object 102 and controller 104 are equipped with NFC capabilities, the controller 104 can be touched to the interactive object 102 in step 202, to pair them together using NFC, wherein “pairing” involves establishing an agreed protocol for communication therebetween. Alternatively, in step 204, if the interactive object 102 and controller 104 are equipped with Bluetooth and/or NFC capabilities, then in step 204, a “connect” button, which is displayed on the home screen 127 as selection button 113 of the controller 104, can be pressed to initiate pairing therebetween. Further, if the controller 104 and interactive object 102 have been previously paired, then the connection therebetween can occur automatically once they are in close proximity (Bluetooth antenna range) of each other.

If the interactive object 102 is not found by the controller 104 in step 206, then in step 208, a message can be displayed on the controller 104 indicating that no interactive objects 102 have been found. Alternatively, if the interactive object 102 is found in step 206, an indication is provided to the user in step 210, such as by displaying an avatar 211 (FIG. 2) of the interactive object 102 on the controller 104. In addition, if the interactive object 102 is found, announcement can be provided at the interactive object 102 as well, such as illuminate one or more body lights 160 (e.g., green LED), as found in step 212. Further, as shown in step 214, audio (i.e., sound, sound file, and audio track) can be played through the speaker 162 of the interactive object 102 to announce the connection. In addition to displaying an avatar 211 of the interactive object 102 in step 210, various selection buttons 113 can be displayed for the user to select a subsequent action. Audio tracks can include digital audio files such as “MP3” and “WAV” files, as well as various other digital file formats.

Referring now to FIG. 6, numerous optional selections can be displayed on the controller 104 using selection buttons 113. These selection buttons 113 can be used to initiate as a plethora of actions by the interactive object 102.
To provide various exemplary selections, FIGS. 6-8 are provided. These exemplary selections are not intended to be limiting with regard to the capabilities of the interactive object 102 or the controller 104. In step 300, a “sing songs” button displayed on the controller 104 is selected by the user. This prompts the display of additional sub-menu selections in step 302. For example, a “save songs” button can be displayed, a “download new songs” button can be displayed, and/or a list of selectable songs that were previously downloaded can be displayed.

Choosing from the selections, a user selects one of the selectable songs displayed in step 304. This selection prompts the song to be played from the object speaker 162 in the interactive object 102 and/or the controller speaker 179 in step 306. In addition, selection of the song can initiate illumination of one or more body lights 160 on the interactive object 102, as in step 308. Further, selection of the song in step 304 can initiate the playing of an animation on the controller 104 in step 310. Annunciation of the selected song can be provided by the interactive object 102, such as by sounding a noise (e.g., a “giggle”), as in step 312, and/or, illuminating one or more LEDs on the interactive object 102, as in step 314. In step 316, the user is prompted with a choice to repeat the song. If the user chooses not to repeat, then at step 318, the sub-menu is displayed from step 302.

Beginning again from step 302 with a listing of available songs displayed, if the user selects “save songs” button at step 330, then at step 332, the avatar 211 of the interactive object 102 is displayed with avatar body portions 123 on the controller 104. The avatar body portions 123 are displayed on the controller 104 to assist a user with identifying the status of the various object inputs 120. More particularly, the avatar body portions 123 are displayed with body portion indicators 151 (e.g., illuminated or contrast colored display screen portions (e.g., pixels)). The body portion indicators 151 represent unassigned object inputs 120 and serve as user input points on the controller display screen 180 for a user to touch to make a selection. For example, an avatar body portion 123 (e.g., an avatar foot 125) can be shown with a body portion indicator 151 illuminated green if no song is assigned and red if a song is already assigned to a particular object body portion 119. Additionally, as in step 334, body lights 160 on the interactive object 102 can also be illuminated to correspond with the body portion indicator 151 on the avatar 211. For example, a body portion light 160 on the foot 105 of the interactive object 102 would be illuminated with a color that corresponds to the color displayed on the body portion indicator 151 of the avatar 211. This provides easy identification of the available choices for assigning a song. In step 336, the user selects one of the displayed songs and assigns it to the desired object body portion 119 of the interactive object 102. The assignment can be accomplished in many ways, such as by touching the song and then the desired avatar body portion 123 displayed on the controller 104. After the assignment, the newly assigned body portion light 160, and/or the body portion indicator 151 can be illuminated to acknowledge the assignment, as shown in steps 338 and 339. For example, before the selection of a song, a green illumination that is shown at a body portion light 160 of the interactive object 102, and/or body portion indicator 151 on the controller 104, can change to red upon a successful assignment. In step 340, the controller 104 can display an option to assign further songs to the interactive object 102, in which if the additional assignments are desired, the process then returns to step 336.

Referring to FIG. 7, if no additional assignments are desired, then the process moves to step 341, wherein the user can activate the newly assigned object input 120 by activation of one of the object inputs 120 (e.g., sensor 150) that is associated with a particular object body portion 119. Upon activation, the process moves to step 342 where the assigned song is played from the object speaker 162. In addition, step 343 includes illuminating one or more body lights 160 on the interactive object 102. At step 344, a separate sound (e.g., giggle) is played from the object speaker 162 when the song is done playing. Further, in step 346, the one or more body lights 160 can change color to signify that the interactive object 102 is ready for the next instruction. At step 348, the user can activate another object body portion 119 to play another song, thereby returning to step 341. If no action is taken, the avatar 211 is displayed on the controller 104 with body portion indicators 151 illuminated to identify assigned and unassigned object body portions 119 in step 350, and the body lights 160 on the interactive object 102 are likewise illuminated to correspond with the avatar 211 body portion indicators 151 on the avatar body portions 123 in step 352. The process can then return to step 210 or step 302 at this point to provide additional options to the user.

Referring again to step 302 in FIG. 6, where the “download new songs” selection button 113 is displayed on the controller 104, the user can select “download new songs” in step 402, which brings up a listing of available media, such as songs, stories, applications, etc. in step 404. The media can be provided by numerous sources, such as GOOGLE PLAY, APP STORE, WINDOWS STORE, etc. In step 406, the media is selected by the user for downloading to the device. Once downloaded, the media would be displayed by the controller 104 as available media for selection, such as found in step 304 and step 336.

Returning again to step 210, and with reference to FIG. 8, the user can select “read story” at step 502 from the selection buttons 113, wherein the controller 104 then displays a selection of available stories at step 504. Further selection buttons 113 can be displayed providing additional actions, such as “download new stories” and “record story voices.” If the user selects “download new stories” at step 506, the process then moves to step 404 to view the selection of stories available for download. At step 508, the user can select and play one of the available stories. During the playing of the story, the animation for the story is displayed on the controller 104 in step 510, and in step 512, the audio track of the story is played through the object speakers 162 to provide the appearance that the interactive object 102 is telling the story. Additionally, in step 514, the body lights 160 are illuminated with a designated color, such as blue. At step 516, the first control program 190 and controller processor 131 check if the story includes a subsequent page, if so, the process returns to step 504, if yes, then the user can advance to the next page by pressing a “next page” selected button 113 displayed on the controller 104, as in step 517, and/or activating an object input 120, such as a sensor 150 located in the object body portion 119 (e.g., stomach 115, chest 112, etc.), as in step 518. Advancing to a subsequent page returns the process to step 510. Once the story is complete, the process returns to step 504, wherein the user can make a new selection. The user may choose to record a story to provide a
familiar voice to the interactive object 102. To do so, the user selects “record story voices” at step 520, and a list of available stories for recording is displayed at step 522. At step 524, the user selects to record one of the stories, and at step 526, the story text is displayed on the controller 104 and the user reads it into the controller microphone 178. The pages of the story text can be advanced by a “next page” selection on the controller 104. At the termination of the story, the process returns to step 504 and new options can be displayed related to the newly recorded story.

[0045] Numerous sounds and functions can be preprogrammed into the object memory device 134 during manufacturing. In addition, sounds and functions can be downloaded to the interactive object 102 from the controller 104. Returning to step 210, once the interactive object 102 is paired with the controller 104, the object inputs 120 can be manipulated to activate various object outputs 122, including lights, sounds, etc. For example, the user can activate the sensor 150 positioned in the stomach 115 of the interactive object 102, and a sound such as a “laugh,” can be played from the object speaker 162. In addition, body lights 160 can be illuminated and in an animation can be displayed on the controller 104 for viewing by the user. Other actions can include turning the interactive object 102 upside-down, thereby activating an object input 120, such as the accelerometer 152 and/or gyroscope 154, resulting in a preselected or random audio track being played from the object speaker 162.

[0046] The above exemplary processes have been described with primary focus on the actions and responses from the controller 104 and interactive object 102 from the perspective of the user. Below and with reference to FIGS. 9-16, additional exemplary processes are described with primary focus on the actions as performed from the perspective of the interactive object 102 and controller 104 (i.e., first control program 190 and second control program 198). Referring to FIG. 9, the first control program 190 has downloaded to the device, via communication from the controller 104 to a suitable program source, such as described above. At step 602, the controller 104 receives a command to load the first control program 190. At step 604, upon successful loading, the controller 104 displays one or more selection buttons 113, at least one identified as a “connect” button. It is to be understood throughout, that in at least some embodiments, a reference to “displays” on the controller 104 includes displaying on the controller display screen 180. In addition, audio can be played from the controller speaker 179. Pairing of the controller 104 and the interactive object 102 can occur in various ways, in at least some embodiments, the pairing can occur automatically, as in step 606, when the first control program 190 loaded.

[0047] The pairing can also occur via NFC by touching the interactive object 102 with the controller 104 or placing it within near proximity to the interactive object 102, wherein the interactive object 102 can have a NFC tag installed. The NFC tag, being in at least some embodiments, a programmable device that provides or triggers an action instruction in the controller 104 when the controller senses the tag to be in near proximity to the controller 104. In addition, as in step 608, the controller 104 receives a connect instruction, via the “connect” button, and initiates the pairing process. At step 610, the controller 104 verifies that pairing is successful and the process moves to step 612. If pairing is unsuccessful, announcement is provided by the controller 104 and the process returns to step 604 for further instruction. At step 612, the controller 104 displays the avatar 211 of the interactive object 102. Further, the controller 104 can transmit a command to the interactive object 102, via communication initiated between the object processor 129 and the controller processor 131, utilizing the object transceiver(s) 132 and controller transceiver(s) 133. The command can include an announcement of the pairing to be performed by the interactive object 102, such as illuminating body lights 160, etc. In addition to displaying the avatar 211, one or more additional or replacement selection buttons 113 are displayed on the controller 104.

[0048] In at least one embodiment, as shown in FIG. 10, the controller 104 displays a selection button 113 identified as a “sing songs” button, as in step 702. In step 704, the controller 104 (controller processor 131) receives an input selection from the “sing songs” button and in step 706, the controller 104 responds by displaying a list of songs on the controller 104, optionally with a play button adjacent each song. In step 708, the controller 104 receives an input selection to play a specific song and transmits the audio track for the song to the interactive object 102 with a command to play the song over the object speaker 162, as in step 710. Additionally, the controller 104 can display animation on the controller 104 utilizing the avatar 211 or another object, as in step 712. Further, a command can be transmitted from the controller 104 to the interactive object 102 that instructs the interactive object 102 to illuminate one or more body portion indicators 151, as in step 714. Optionally, after step 708, the controller 104 can display a query asking if the song should be played on multiple toys, as in step 716. If so, then at step 718, the audio track is transmitted to the interactive object 102 as well as any other paired interactive objects 102 chosen. Alternately, the controller 104 can provide a listing of paired objects and then act on the selected objects only.

[0049] During the playing of the audio track on the object speaker 162, the controller 104 can display animation of the avatar 211 associated with the interactive object 102, along with any additional avatars displayed as a result of pairing with additional objects, as in step 720. Further, the process moves to step 714, where a command is transmitted from the controller 104 to one or more interactive objects 102 that instructs them to illuminate one or more body portion indicators 151. At step 722, the controller 104 processes that the audio track is finished playing, and at step 724 the controller 104 transmits a command to the interactive object 102 to announce the end of the song, such as playing audio track that includes a “ giggle”, and/or in step 726, the controller 104 transmits a command to the interactive object 102 to illuminate one or more body lights 160 with a distinctive color. At the end of the “giggle” audio track in step 728, the process returns to step 706 to display the song list again on the controller 104.

[0050] Still referring to FIG. 10, at step 706, a selection button 113 identified as a “download new songs” button can be displayed on the controller 104. If the controller 104 receives a signal that the “download new songs” button has been selected, the process moves to step 730, wherein a command is initiated on the controller 104 to engage in communication with a network (e.g., Internet) to access a resource for new songs, such as GOOGLE PLAY, APP STORE, WINDOWS STORE, etc. Assuming a new song has been selected, in step 732 the controller 104 downloads the new song and
saves it to the controller memory device 199 in a folder (e.g., "library") and adds the new song to the list of available songs for selection.

[0051] Referring now to FIG. 11, and returning to step 612, which can include the controller 104 displaying a selection button 113 identified as a "store songs to object" button, or a subsequent display, as in step 802. At step 804, the controller 104 receives input from the selector button 113 identified as a "store songs to object" button and in step 806, displays a song storage screen with a list of songs. At step 808, the controller 104 queries if multiple objects are paired and if so, at step 810, the controller 104 prompts for selection of a single interactive object 102 to receive the song. Once the desired interactive object 102 has been identified, at step 812, the controller 104 displays the avatar 211 for that interactive object 102 with body portion indicators 151 illuminated to identify available selections for assignment of the song to an object body portion 119 (e.g., green to indicate an available body portion and red to indicate an unavailable body portion (previously assigned)). To assist with assignment of the song, the controller 104 transmits a command to the interactive object 102 to illuminate the body lights 160 of the interactive object 102 with colors similar to the avatar's 211 body portion indicators 151. At step 816, the controller 104 receives a selection of a song that was displayed on the list of available songs and in response, at step 818, prompts for a selection of a body portion displayed by the body portion indicators 151 on the controller 104. At step 820, the controller 104 receives the selection and transmits the song (audio file TRACK) to the object memory device 134. At step 822, a tag is assigned to link the song with the object input 120 associated with the selected object body portion 119. This tag is stored in the object memory device 134 and/or the controller memory device 199. Then at step 824, the body portion indicators 151 of the selected avatar body portion 123 on the avatar 211 changes from a green light to a red light to announce the assignment of that object input 120. Further, in step 826, the controller 104 transmits a command to change the body portion light 160 from green to red to announce the assignment of the selected object input 120.

[0052] Referring now to FIG. 12, and continuing from step 612, the controller 104 displays a selection button 113 identified as a "read story" button in step 902. At step 904, the controller 104 receives input from the "read story" button, and in step 906, displays a story selection home screen that includes various selection buttons 113 such as, a "story selection list" button, a "record story voices" button, and a download "new stories" button. At step 908, the controller 104 receives an input from the "story selection list" button and, at step 910, the controller 104 displays a list of available stories with "play" buttons. The controller 104 receives a "play" button input selecting one of the stories to play. At step 914, the controller 104 queries if multiple interactive objects 102 are paired and if so, at step 916 the controller 104 displays a prompt for selection of a single interactive object 102 and moves to step 918 after receiving an interactive object 102 selection. If only one interactive object 102 is paired, then the process moves to step 918. At step 918, the controller 104 displays an animation of the story. At step 920, the controller 104 transmits the audio track for the story to the interactive object 102 with a command to play the audio track. The audio track is played over the object speaker 162. In addition, the controller 104 transmits a command to the interactive object 102 to illuminate one or more body lights 160 at step 922. At step 924, the first control program 190 and controller processor 131 checks if the story includes a subsequent page, if no, the process returns to step 906 to receive a new instruction, if yes, then the controller 104 displays a selection button 113 identified as a "next page" button on the controller 104, in step 926. In step 928, the controller 104 receives input from the "next page" button. Alternatively, in step 930, the controller 104 can receive an input communication from the interactive object 102, such as when an object input 120 (e.g., a sensor 150) located in an object body portion 119 (e.g., stomach 115, chest 112, etc.), is activated. Upon receiving an input, at step 928 or step 930, the controller 104 initiates a command to display the next page (animation) on the controller 104 in step 932, which advances the process to step 918, wherein the subsequent story page is displayed and corresponding audio track is played, as in step 920.

[0053] In addition to reading a story with a pre-recorded voice, a new story voice can be recorded and played with the story. Returning to step 906 and referring to FIG. 13, the controller 104 receives an input from the "record story voices" button in step 1002, prompting the controller 104 to display a record home screen with a list of available stories with a selection button 113 identified as a "record button for each story" in step 1004. In step 1006, the controller 104 receives an input selection of one of the record buttons. In step 1008, the controller 104 displays the animation of the first story page on the controller 104 (including the text for story) and in step 1010, the controller 104 initiates the controller microphone 178 to begin receiving audio and records audio received by the controller microphone 178. At step 1012, first control program 190 and controller processor 131 checks if the story includes a subsequent page, if no, the process advances to step 1014, where a command is initiated by the first control program 190 to save the recorded audio as an audio track to the controller memory device 199 and adds the audio track to the listing of available stories. In step 1016, after the audio track has been saved, the process returns to step 1004 to display the record home screen. If a subsequent page is found in step 1012, then in step 1018, the controller 104 displays a selection button 113 identified as a "next page" button to advance the pages of the story being displayed on the controller 104, and waits to receive input from the "next page" button or an input from the interactive object 102, via an object input 120. In step 1020, the controller 104 receives input from the "next page" button and in step 1022, the controller 104 initiates a command to advance the display of the story to the next page in the story and returns to step 1008.

[0054] Manipulation of the interactive object 102, with or without pairing to the controller 104, can initiate an object output 122 to be activated by the second control program 198. Referring to step 610 (FIG. 9) and referring now to FIG. 14, in step 1102, an object input 120 is manipulated to activate an object input 120. For example, the interactive object 102 receives an input from the accelerometer 152 and/or gyroscope 154 indicating that the interactive object 102 has been at least partially inverted. Upon receiving the input, at step 1102, at either the first control program 190 or the second control program 198 (via transmission to the controller 104), one of the object outputs 122 is commanded to activate by the first control program 190, communicating the command to the second control program 198, or directly via the second control program 198 (if interactive object 102 is not paired with the controller 104). The object output 122 can include various actions, for example, in step 1104, an audio track is
transmitted from the controller 104 (if not stored in the object memory device 134) to the interactive object 102 for playing through the object speaker 162. Otherwise, if resident, the audio track can be played from the object memory device 134 without the need for any communication with the controller 104. In addition, in a like manner, the object outputs 122 can include the body lights 160, which are illuminated one of various colors, as noted in step 1106.

[0055] In another example, as shown in FIG. 15, the object input 120 that is sensed by the second control program 198, can originate from a sensor 150 (e.g., activated by pushing on the stomach) in step 1202, which in steps 1204 and 1206, initiates a command for an audio track to be transmitted from the controller 104 (if not stored in the object memory device 134) to the interactive object 102 for playing through the object speaker 162, followed by the instruction to play the audio track. Otherwise, if resident in the object memory device 134, the audio track can be accessed from the object memory device 134 without the need for any communication with the controller 104. In addition, in a like manner, the object outputs 122 can include the body lights 160, which are illuminated one of various colors, as noted in step 1206. Further, as discussed above, the sensors 150 (as well as other object outputs 122) can be programmed to initiate specific actions, such as playing a particular audio track (e.g., a song). For example, as discussed in FIG. 16, at step 1302, if the second control program 198 senses an input from one of the sensors 150 (e.g., in hand 107 or foot 105 of the object), then in step 1304, the second control program 198 and/or the first control program 190 checks if a specific output action (e.g., play an audio track) is assigned to that particular sensor 150. If not, then in step 1306, no action is taken. If for example the assigned action was to play an audio track, then the stored audio track would be accessed by the second control program 198, in step 1308. In step 1310, the audio track would be played by the second control program 198 from the object speaker 162. In addition to the audio track being played, a command to illuminate one or more body lights 160 can be provided by the second control program 198 in response to sensing the object input 120 (e.g., sensor 15). In step 1314 the end of the audio track is sensed by the second control program 198 and in step 1316, a specific audio track (e.g., a "giggle" track) is played to announce the end of the audio track. Likewise one or more other object outputs 122 can be utilized to announce the end of the audio track, such as the body lights 160, as seen in step 1318. Finally, the process ends in step 1320 when the specific audio track finishes.

[0056] Although various references above include action described as being performed by the controller 104, it is to be understood that these various actions are more specifically performed via instruction from the first control program 190 as operated by the controller processor 131. Likewise, although various references above include action described as being performed by the interactive object 102, it is to be understood that these various actions are more specifically performed via instruction from the second control program 198 as operated by the object processor 129. It should be noted that although this process is described with respect to songs, stories, etc., numerous types of media (e.g., photos) and numerous functions (e.g., speaking phrases, vibrating body portions, etc.), can be assigned to operate with various object body portions 119. With regard to the first control program 190 and second control program 198, one or both of the programs can be configured (via real-time or pre-pro-

[0057] The interactive object 102 can, in at least some embodiments, include numerous objects, such as medical devices, kitchen appliances, and other consumer products that can benefit from the interfacing and control afforded by the controller 104. The first control program 190 and second control program 198 can be tailored to address the desired features for these additional objects. It is specifically intended that the method and apparatus for interactive play is not to be limited to the embodiments and illustrations contained herein, but include modified forms of those embodiments including portions of the embodiments and combinations of elements of different embodiments as come within the scope of the following claims. Further, the steps described herein with reference to the method of operation (processes) are not to be considered limiting and can include variations, such as additional steps, removed steps, and re-ordered steps.

[0058] It should be appreciated that the present disclosure is intended to encompass numerous embodiments as disclosed herein and further described by the following:

[0059] (i) An interactive toy object apparatus comprising:

[0060] (a) a toy body that includes a plurality of object body portions;

[0061] (b) an object control circuit secured to the body that includes an object processor, an object memory device, and one or more object transceivers;

[0062] (c) a plurality of object inputs and object outputs secured to one or more of the object body portions and in communication with the object control circuit; and

[0063] (d) a first control program stored in the object memory device and operable by the object processor, wherein the interactive object is capable of communicating with a controller, via the one or more object transceivers, to receive or transmit at least one of commands, inputs, and outputs, therebetween.

[0064] (ii) The apparatus of (i), wherein the plurality of object inputs include a first tactile sensor secured to a first object body portion and a second tactile sensor secured to a second body portion, and wherein the plurality of object outputs include a speaker.

[0065] (iii) The apparatus of any one of (i)-(ii), wherein the toy body is a stuffed animal comprising at least in part of a cloth material and a stuffing material.

[0066] (iv) The apparatus of any one of (i)-(iii), wherein the plurality of object inputs include a microphone for receiving a voice prompt, and wherein the first control program is configured to respond to the voice prompt by activating one or more of the plurality of object outputs to provide an announcement of at least one of sound, motion, or light.

[0067] (v) The apparatus of any one of (i)-(iv), wherein the plurality of object outputs includes the speaker and one or more lights.

[0068] (vi) The apparatus of any one of (i)-(v), wherein the plurality of object inputs includes a gyroscope for sensing a position change of the toy body from a first position to an inverted second position, wherein the first control program is configured to activate one or more of the plurality of object outputs to provide an announcement of at least one of sound, motion, or light upon sensing the toy body moving from the first position to the inverted second position.

[0069] (vii) The apparatus of any one of (i)-(vi), wherein the plurality of object inputs includes an accelerometer for
sensing a position change of the toy body from a first position to a second position, wherein the first control program is configured to activate one or more of the plurality of object outputs to provide an announcement of at least one of sound, motion, or light upon sensing the toy body moving from the first position to the second position.

[0070] (viii). The apparatus of any one of (i)-(vii), wherein the one or more transceivers are configured to receive wireless programming instructions, and wherein the programming instructions include the assignment of one or more of the plurality of object inputs to one or more of the object outputs.

[0071] (ix). The apparatus of any one of (i)-(viii), wherein the one or more transceivers are configured to receive wireless instructions, and wherein the instructions include the assignment of one or more of the plurality of object inputs to one or more of the object outputs, such that activation of one or more of the plurality of object inputs activates associated object outputs to provide at least one of sound, motion, or light.

[0072] (x). The apparatus of any one of (i)-(ix), wherein once the instructions are received, the object outputs respond to the associated object inputs without further instructions being received by the transceivers.

[0073] (xi). The apparatus of any one of (i)-(x), wherein the toy body includes a pair of arms, a pair of legs, and a chest, wherein the arms and chest each include an object input and an object output.

[0074] (xii). The apparatus of any one of (i)-(xi), wherein the one or more transceivers are paired with a controller using a wireless connection, and the controller includes a display screen that displays an avatar of the toy body.

[0075] (xiii). A method of interactive play with a toy comprising:

[0076] providing a toy object that includes a toy body and an object control circuit secured to the body that includes an object processor, an object memory device, and at least one communication device;

[0077] activate one of a plurality of object inputs secured to one of a plurality of object body portions forming the toy body; and

[0078] play an audio track stored in the object memory device via one or more object outputs secured to one or more of the body portions, wherein the audio track is assignable to be activated by one or more of the object inputs.

[0079] (xiv). The method of (xiii), wherein the toy body is a stuffed animal comprising at least in part of a cloth material and a stuffing material.

[0080] (xv). The method of any one of (xiii)-(xiv), wherein the audio track is assignable via a controller capable of communicating with the communication device.

[0081] (xvi). The method of any one of (xiii)-(xv), wherein the audio track is chosen from a plurality of audio tracks that are stored in a controller memory of the controller.

[0082] (xvii). The method of any one of (xiii)-(xvi), further including displaying an avatar image of the toy body on the controller, wherein the body portions of the toy body displayed in the avatar image are selectable on the controller for assignment to one of the audio tracks.

[0083] (xviii). The method of any one of (xiii)-(xvii), further including activating one or more object outputs associated with the body portion during the assignment of a selected audio track.

[0084] (xix). A method of interactive play with a toy comprising:

[0085] providing a controller having a display screen, a controller processor, a controller memory, and a wireless controller transceiver, wherein the controller is configured to communicate with a toy object via the controller transceiver; and

[0086] displaying on the display screen a plurality of selections that include one or more of selecting an audio track from a library of audio tracks in the controller memory, downloading an audio track for storage in the controller memory, and recording an audio track for storage in the controller memory.

[0087] (xx). The method of (xix), further including:

[0088] selecting one of the audio tracks stored in the library of the controller memory and communicating the audio track to the toy object via the controller receiver;

[0089] receiving the communicated audio track at the toy object;

[0090] storing the communicated audio track in an object memory of the toy object; and

[0091] playing the audio track via a speaker secured to the toy object upon receipt of an activation of an object input situated on a body portion of the toy object.

[0092] (xxi). An apparatus comprising:

[0093] a controller comprising:

[0094] a controller processor;

[0095] a controller memory device;

[0096] a communication device;

[0097] a controller display screen;

[0098] one or more controller transceivers;

[0099] a first control program resident in the controller memory device and operable by the controller processor; and

[0100] an interactive object comprising:

[0101] an object control circuit;

[0102] an object processor;

[0103] object memory device;

[0104] one or more object transceivers; and

[0105] a second control program resident in the object memory device and operable by the object processor,

[0106] wherein the controller is capable of communicating with the interactive object, via the transceivers, to receive and transmit at least one of commands, inputs, and outputs, therebetween.

[0107] (xxii). The apparatus of (xxi), wherein the controller is paired with the interactive object using a wireless connection.

[0108] (xxiii). The apparatus of any one of (xxi)-(xxii), wherein the interactive object is configured to be operated without a continuous connection to the controller.

[0109] While the principles of the method and apparatus for interactive play have been described above in connection with regard to a specific apparatus, it is to be clearly understood that this description is made only by way of example and not as a limitation on the scope of the method and apparatus for interactive play. It is specifically intended that the method and apparatus for interactive play are not limited to the embodiments and illustrations contained herein, but include modified forms of those embodiments, including portions of the embodiments and combinations of elements of different embodiments as come within the scope of the following claims. In addition, the various methods of use described herein can include additional steps not described herein or
can omit steps described herein. Further, the various steps can be performed in a different order than described herein.

We claim:

1. An interactive toy object apparatus comprising:
a toy body that includes a plurality of object body portions;
an object control circuit secured to the body that includes
an object processor, an object memory device, and one
or more object transceivers;
a plurality of object inputs and object outputs secured to
one or more of the object body portions and in commu-
nication with the object control circuit; and
a first control program stored in the object memory device
and operable by the object processor, wherein the inter-
active object is capable of communicating with a con-
troller, via the one or more object transceivers, to receive
or transmit at least one of commands, inputs, and out-
puts, therebetween.

2. The apparatus of claim 1, wherein the plurality of object
inputs include a first tactile sensor secured to a first ob-
to body portion and a second tactile sensor secured to a second
body portion, and wherein the plurality of object outputs
include a speaker.

3. The apparatus of claim 2, wherein the toy body is a
stuffed animal comprising at least in part of a cloth material
and a stuffing material.

4. The apparatus of claim 3, wherein the plurality of object
inputs include a microphone for receiving a voice prompt, and
wherein the first control program is configured to respond to
the voice prompt by activating one or more of the plurality of
object outputs to provide an announcement of at least one of
sound, motion, or light.

5. The apparatus of claim 4, wherein the plurality of object
outputs includes the speaker and one or more lights.

6. The apparatus of claim 5, wherein the plurality of object
inputs includes a gyroscope for sensing a position change of
the toy body from a first position to an inverted second posi-
tion, wherein the first control program is configured to ac-
tivate one or more of the plurality of object outputs to provide
an announcement of at least one of sound, motion, or light upon
sensing the toy body moving from the first position to the
inverted second position.

7. The apparatus of claim 6, wherein the plurality of object
inputs includes an accelerometer for sensing a position change of
the toy body from a first position to a second position, wherein the first control program is configured to ac-
tivate one or more of the plurality of object outputs to provide
an announcement of at least one of sound, motion, or light upon sensing the toy body moving from the first position to the second position.

8. The apparatus of claim 7, wherein the one or more
transceivers are configured to receive wireless programming
instructions, and wherein the programming instructions include the assignment of one or more of the plurality of object inputs to one or more of the object outputs.

9. The apparatus of claim 8, wherein the one or more
transceivers are configured to receive wireless instructions,
and wherein the instructions include the assignment of one or
more of the plurality of object inputs to one or more of the
object outputs, such that activation of one or more of the
plurality of object inputs activates associated object outputs
to provide at least one of sound, motion, or light.

10. The apparatus of claim 9, wherein once the instructions
are received, the object outputs respond to the associated
object inputs without further instructions being received by
the transceivers.

11. The apparatus of claim 10, wherein the toy body includes a pair of arms, a pair of legs, and a chest, wherein the arms and chest each include an object input and an object output.

12. The apparatus of claim 3, wherein the one or more
transceivers are paired with a controller using a wireless
connection, and the controller includes a display screen that
displays an avatar of the toy body.

13. A method of interactive play with a toy comprising:
providing a toy object that includes a toy body and an
object control circuit secured to the body that includes
an object processor, an object memory device, and at
least one communication device;
activate one of a plurality of object inputs secured to one of
a plurality of object body portions forming the toy body;
and
play an audio track stored in the object memory device via
one or more object outputs secured to one or more of the
body portions, wherein the audio track is assignable to
be activated by one or more of the object inputs.

14. The method of claim 13, wherein the toy body is a
stuffed animal comprising at least in part of a cloth material
and a stuffing material.

15. The method of claim 14, wherein the audio track is
assignable via a controller capable of communicating with
the communication device.

16. The method of claim 15, wherein the audio track is
chosen from a plurality of audio tracks that are stored in a
controller memory of the controller.

17. The method of claim 14, further including displaying
an avatar image of the toy body on the controller, wherein the
body portions of the toy body displayed in the avatar image
are selectable on the controller for assignment to one of the
audio tracks.

18. The method of claim 17, further including activating
one or more object outputs associated with the body portion
during the assignment of a selected audio track.

19. A method of interactive play with a toy comprising:
providing a controller having a display screen, a controller
processor, a controller memory, and a wireless controller
transceiver, wherein the controller is configured to com-
municate with a toy object via the controller transceiver;
and
displaying on the display screen a plurality of selections
that include one or more of selecting an audio track from a
library of audio tracks in the controller memory, download-
ing an audio track for storage in the controller memory, and
recording an audio track for storage in the controller memory.

20. The method of claim 19, further including
selecting one of the audio tracks stored in the library of
the controller memory and communicating the audio track
to the toy object via the controller receiver;
receiving the communicated audio track at the toy object;
storing the communicated audio track in an object memory
of the toy object; and
playing the audio track via a speaker secured to the toy
object upon receipt of an activation of an object input
situated on a body portion of the toy object.