signals generated by the one or more sensing coordinates may be used to inform the media player **100** that the object is at a specific zone **113** on the touch pad **110**.

[**0079**] The actuation zones may be button zones or positional zones. When button zones, a button control signal is generated when an object is placed over the button zone. The button control signal may be used to make selections, open a file, execute instructions, start a program, view a menu in the media player. When positional zones, a position control signal is generated when an object is placed over the positional zone. The position signals may be used to control the movement of an object on a display screen of the media player. The distribution of actuation zones may be controlled by touch pad translation software or firmware that converts physical or native coordinates into virtual representation in the form of actuation zones. The touch pad translation software may be run by the control assembly of the touch pad or the main system processor of the media player. In most cases, the control assembly converts the acquired signals into signals that represent the zones before sending the acquired signals to the main system processor of the media player.

[**0080**] The position control signals may be associated with a Cartesian coordinate system (x and y) or a Polar coordinate system (r, θ). Furthermore, the position signals may be provided in an absolute or relative mode. In absolute mode, the absolute coordinates of where it is being touched on the touch pad are used. For example x, y in the case of the Cartesian coordinate system or (r, θ) in the case of the Polar coordinate system. In relative mode, the change in position of the finger relative to the finger's previous position is used. The touch pad may be configured to operate in a Cartesian-absolute mode, a Cartesian-relative mode, a Polar-absolute mode or a Polar-relative mode. The mode may be controlled by the touch pad itself or by other components of the media player system.

[**0081**] In either case, a user may select which mode that they would like to operate in the media player system or the applications running on the media player system may automatically set the mode of the media player system. For example, a game application may inform the media player system to operate in an absolute mode so that the touch pad can be operated as a joystick or a list application may inform the media player system to operate in a relative mode so that the touch pad can be operated as a scroll bar.

[**0082**] In one embodiment, each of the zones **113** represents a different polar angle that specifies the angular position of the zone **113** in the plane of the touch pad **110**. By way of example, the zones **113** may be positioned at 90 degree increments all the way around the touch pad **110** or something smaller as for example 2 degree increments all the way around the touch pad **110**. In one embodiment, the touch pad **110** may convert 1024 physical positions in the form of sensor coordinates, to a more logical range of 0 to 127 in the form of positional zones. As should be appreciated, the touch pad internal accuracy (1024 positions) is much larger than the accuracy (128 positions) needed for making movements on the display screen.

[**0083**] The position of the touch pad **110** relative to the housing **102** may be widely varied. For example, the touch pad **110** may be placed at any external surface (e.g., top, side, front, or back) of the housing **102** that is accessible to a user during manipulation of the media player **100**. In most cases, the touch sensitive surface **111** of the touch pad **110** is completely exposed to the user. In the illustrated embodiment, the touch pad **110** is located in a lower, front area of the housing **102**. Furthermore, the touch pad **110** may be recessed below, level with, or extend above the surface of the housing **102**. In the illustrated embodiment, the touch sensitive surface **111** of the touch pad **110** is substantially flush with the external surface of the housing **102**.

[**0084**] The shape of the touch pad **110** may also be widely varied. For example, the touch pad **110** may be circular, rectangular, triangular, and the like. In general, the outer perimeter of the shaped touch pad defines the working boundary of the touch pad. In the illustrated embodiment, the touch pad **110** is circular. This particular shape works well with Polar coordinates. More particularly, the touch pad is annular, i.e., shaped like or forming a ring. When annular, the inner and outer perimeter of the shaped touch pad defines the working boundary of the touch pad.

[**0085**] In addition to above, the media player **100** may also include one or more buttons **114**. The buttons **114** are configured to provide one or more dedicated control functions for making selections or issuing commands associated with operating the media player **100**. By way of example, in the case of an MP3 music player, the button functions may be associated with opening a menu, playing a song, fast forwarding a song, seeking through a menu and the like. The buttons **114** may be mechanical clicking buttons and/or they may be touch buttons. In the illustrated embodiment, the buttons are touch buttons that receive input from a finger positioned over the touch button. Like the touch pad **110**, the touch buttons **114** generally consist of a touchable outer surface for receiving a finger and a sensor arrangement disposed below the touchable outer surface. By way of example, the touch buttons and touch pad may generally correspond to the touch buttons and touch pad shown in **FIG. 2**.

[**0086**] The position of the touch buttons **114** relative to the touch pad **110** may be widely varied. For example, they may be adjacent one another or spaced apart. In the illustrated embodiment, the buttons **114** are placed above the touch pad **110** in a linear manner as well as in the center of the annular touch pad **110**. By way of example, the plurality of buttons **114** may consist of a menu button, play/stop button, forward seek button, a reverse seek button, and the like.

[**0087**] Moreover, the media player **100** may also include a hold switch **115**. The hold switch **115** is configured to activate or deactivate the touch pad and/or buttons. This is generally done to prevent unwanted commands by the touch pad and/or buttons, as for example, when the media player is stored inside a user's pocket. When deactivated, signals from the buttons and/or touch pad are not sent or are disregarded by the media player. When activated, signals from the buttons and/or touch pad are sent and therefore received and processed by the media player.

[**0088**] Moreover, the media player **100** may also include one or more headphone jacks **116** and one or more data ports **118**. The headphone jack **116** is capable of receiving a headphone connector associated with headphones configured for listening to sound being outputted by the media device **100**. The data port **118**, on the other hand, is capable of receiving a data connector/cable assembly configured for