intelligent foot may train with the device on a periodic basis in order to train the brain to associate pressure on the amputated limb, for instance, with the performance characteristics perceived by wearing the intelligent device. For example, the user may feel certain pressures on the amputated limb from the device, or an intermediate member such as a pylon, at the moment of a heel strike. At this moment, the intelligent device may be configured to transmit a particular sound signal. Over time, the user may learn to associate the sound of a heel strike with the related pressures felt on the limb. Another sound may indicate when the sensor system has perceived a toe load. Thus, when the user hears this alternative sound, the user's brain may begin to associate that sound with the different pressure sensations felt on the amputated limb, caused, for instance, by the contact with the socket of a prosthetic foot. When the intelligent device detects neither a heel strike nor a toe load, for example, the intelligent device may emit another sound, indicating that there is no perceived state. By training the user to associate sounds with, for instance, the pressure on a limb caused by a device associated with a limb, the user of the device may begin to rehabilitate the natural proprioceptive functions of the limb, which may be impaired. In this sense, embodiments of the invention may be used to provide artificial proprioception to a user of the device.

[0106] In some embodiments, the intelligent device may emit a constant and continuous sound, indicating the present state being perceived by the sensor system. In other embodiments, different discrete sounds may be used. In addition to the rhythm, the pitch and volume may also be varied, as well as any other adjustment that would affect the sound heard by the user or another individual. As the user wears the intelligent device, the particular gait pattern, for example, of the user will be represented by the sounds emitted from the intelligent device, such as a prosthetic foot in accordance with embodiments of the invention. Over time, the user may become accustomed to the alternating sounds and begin to recognize and associate different feelings from the device through the predetermined sounds (e.g., the programmed sounds assigned to different sensing readings). Over a period of time, the user may become accustomed to the sounds and associated feelings, such that the user no longer needs the sounds in order to interpret the feelings from, for example, the prosthetic socket. Thus, in some embodiments, the audio signals may be configured on a temporary basis. In these embodiments, the audio function may consist of a connection to the sensor system, a processor for receiving sensor inputs and a transmitter for creating sound signals for the associated performance characteristics. These components may be provided on a detachable component to the device, or may be wirelessly connected. In other embodiments, the intelligent foot may come equipped with the transmitting unit. In other embodiments, the sound transmitting unit may be attached to the foot as a separate computing device, such as a portable, laptop, or desktop computer. The user may receive the auditory signals through a variety of devices. For instance, as already mentioned, the user may wear headphones that receive the signals. These signals may be transmitted either through wireless or wired communication devices. For instance, the wireless signals may be transmitted through a Bluetooth, WiFi®, infrared, or radio transmitting device. The headphones may be worn in or over the user's ear or possibly implanted within the ear. In other embodiments, the sound may be emitted a speaker on the device that broadcasts sound to any within earshot.

[0107] Embodiments of the present invention relate to, or may be used in combination with, the subject matter disclosed in the following applications, each of which is hereby incorporated herein by reference: U.S. patent application Ser. No. 11/056,344, entitled "SYSTEM AND METHOD FOR MOTION-CONTROLLED FOOT UNIT," filed on Feb. 11, 2005, and published on Sep. 8, 2005, as U.S. Patent Application Publication No. 2005/0197717-A1; U.S. patent application Ser. No. 11/057,391, entitled "SYSTEM AND METHOD FOR MOTION-CONTROLLED FOOT UNIT," filed on Feb. 11, 2005, and published on Sep. 1, 2005, as U.S. Patent Application Publication No. 2005/0192677-A1; U.S. patent application Ser. No. 11/315,648, entitled "SYSTEMS AND METHODS FOR LIMB DETECTION," filed on Dec. 22, 2005; U.S. patent application Ser. No. 11/077,177, entitled "CONTROL SYSTEM AND METHOD FOR A PROSTHETIC KNEE," filed on Mar. 9, 2005, and published on Dec. 22, 2005 as U.S. Patent Application Publication No. 2005/0283257-A1; U.S. patent application Ser. No. 11/123,870, entitled "MAGNETORHEOLOGICALLY ACTUATED PROSTHETIC KNEE," filed on May 6, 2005; U.S. patent application Ser. No. 10/615,336, entitled "SOCKET LINER INCORPORATING SENSORS TO MONITOR AMPUTEE PROGRESS," filed Jul. 8, 2003, and published on Mar. 25, 2004, as U.S. Patent Application Publication No. 2004/0059432; U.S. Pat. No. 6,610,101; and U.S. Pat. No. 6,764,520.

[0108] It will be understood that the foregoing is only illustrative of the principles of the invention, and that various modifications, alterations, and combinations can be made by those skilled in the art without departing from the scope and spirit of the invention. Although this invention has been described in terms of certain embodiments, other embodiments that are apparent to those of ordinary skill in the art, including embodiments which do not provide all of the benefits and features set forth herein, are also within the scope of this invention. Accordingly, the scope of the present invention is defined only by reference to the appended claims.

What is claimed is:

1. A method of gathering information regarding a prosthetic foot, comprising:

providing a prosthetic foot having at least one sensor associated therewith;

measuring with said sensor a performance characteristic of said prosthetic foot while in use; and

storing data corresponding to performance characteristics measured by said sensor within a memory.

2. The method of claim 1, wherein the performance characteristic is a measurement of force applied to said prosthetic foot.

3. The method of claim 1, wherein the performance characteristic is the bending of said prosthetic foot.

4. The method of claim 1, further comprising determining an activity index of a user based on the stored data.

5. The method of claim 1, further comprising measuring said performance characteristic on a step-by-step basis and storing data corresponding to the performance characteristic per step.