\*\* The Nintendo Wii controller, Fitbit and HabitAware biofeedback wearable are essentially the same device from a purely hardware perspective. They all contain a IMU (accelerometer etc.), a vibration motor, a microcontroller, a radio (Bluetooth etc.) and a battery power supply. The primary thing which sets them apart is the code ie firmware on the device and interfacing software for specific application.

\*\* 6DOF (Degrees Of Freedom) bracelet: The hemispherical absolute position prototype works well in terms of determining position in 3d space when the wrist mounted device faces the user and maintains a relatively constant angular position. However, if the hand is rotated, position can no longer be determined. The problem is determining position with three degrees of freedom when six are required. This is the inverse of the issue that an IMU sensor has in determining position. The current prototype has three degrees of freedom : x, y and z coordinates in 3D space. An accelerometer or other IMU sensor also has three degrees of freedom, x y and z (roll, pitch and yaw) in angular direction. In order to determine the position of your hand relative to the body while moving it around naturaly with no attempt to consistently make the sensor face the body 6 degrees of freedom are required. It may be possible to arrive at limited 6 degrees of freedom determination simply by combining accelerometer data with thermopile array data. We have not been able to accomplish this so far, but avnces in data processing may allow partial success. In the end however, greater coverage by thermopile sensors is required for determination of position during natural spontainious movement. The illustrated embodiment (FIGURE X) shows how the current prototype thermopile array might be extended around the entire wrist. With this design, some thermopile will face the body no matter what position the hand is in. The number of required thermopiles could be a great deal smaller than shown in the illustration. As always, the number and kinds of sensors “required” is a product of performance targets. It is also possible that multiple copies of the current prototype with under-wrist hemispherical array might be worn at the same time in such a way that the data from the two devices can be combined. In this way greter thermopile array coverage necessary for 6DOF position determination might be possible without developing an additional device.

\*\* Head Tracking: Most companies currently developing technology similar to our own (Google, Sony) are concerned with htracking the position of the head relative to the torso or an external environment point of reference. This primarily for application to VR (virtual reality) and AR (Augmented Reality) headsets. Our technology may prove a formidable solution to the problem of head tracking. As with existing VR/AR hand held controllers, the difficulty lies in removing the need for an external camera or other off-body sensor. It is possible that simply attaching the current absolute position prototype to the bottom of a VR/AR headset with minmal modification could provide a demonstratable solution. The functionality would be identical to placing the device on the hand or other limb.

\*\*Hand held controller: Allthough all current prototypes are wearable devices intended for the wrist, there is no reason a permutation of the device could not be attached to some sort of handle and used as contoler similar to the (GOOGLE AND HTC) except without the need for an external camera. If we were simply take the current protype and attach it to a gripable stick of sorts it may perform as a VR/AR game controller. If two hermispherical thermopile arrays were used – one on the bottom of the controller and one on the tope – it may be possible to achive 6DOF.

The categories below are not intended to be exclusive – please provide as much detail as possible.  The more potential features, functionality, and elements we include in the application (even if not included in the device and software that you currently intend to commercialize), the more options we have for claiming different iterations of the inventions and, if necessary, focusing the scope of the inventions in response to any pertinent prior art that the Patent Office uncovers and cites against us.  That is particularly important because we have not performed an exhaustive prior art search and it would be somewhat of a waste to do so without this information because we wouldn’t fully know what we are looking for.  Also, for each category below, any drawings or figures you can provide to help illustrate your answers would be helpful.

* The provisional application is directed to using the invention for habit cessation.  Please describe the other contexts/industries/fields in which you may foresee the invention being used (e.g. video games, remote surgical procedures, athletic monitoring). Also, please describe any existing devices of which you are aware in each field and the reasons why they are inferior (or at the least, different), or the obstacles users face when using them that your invention solves.
* The provisional application describes the invention as a device attached to the wrist.  Please describe (perhaps in conjunction with the category above), any other forms or applications you envision.
* Based on the provisional application on file, the claims we drafted recite devices that include at least (1) a sensor for measuring angular position; and (2) a sensor for measuring temperature.  If those elements are sufficient to practice the invention, please describe and give example(s) of how the invention uses the data collected from those elements to determine the position of the device.
* Are there other elements that must be included for the device to perform properly?  Figure 3 of the provisional application identifies components of a device.  Which of these components are included in the current device, which have been eliminated, and what components have been added?
* We further included an accelerometer for all but the broadest claim.  Please describe and give example(s) of how the invention may incorporate the data collected from the accelerometer.
* Regarding your question below about the boundary between contactless thermometers and thermal cameras, do you perceive a difference between those elements?  In the patent application we can define them as equivalent or separate, depending on your preference.  If you consider the two elements to be different, please explain how you understand them to be different.
* Regarding the software developed for the device and the application, please provide a description (and, ideally, a chart or flow diagram) of how the software functions.  For example, the software modules and the data flow from one module to another.  We can treat the software in the device and the software application separately (e.g. with two separate diagrams), or we can describe them as one software application, and explain that some of which may be processed on the device.
* Describe why your invention (either the hardware or the software, or both) is superior to other existing devices or software. We might consider including a graph of data collected from testing the device to show its superior performance, if that is possible to obtain.