

CLAIMS

1. A method for providing a tracking information of a body area comprising:
producing an acoustic field from a transducer array having relative positions and orientations attached to a user;
sending by the transducer array an acoustic signal in the form of a focal point targeted to a control point of the body area so as to generate a sine wave in the body area;
dynamically updating the relative position and orientation of the transducer array as the user moves; and
dynamically updating the position of the focal point as the user moves;
wherein the user is wearing at least one skin-coupled microphone,
and the amplitude of the sine wave is measured by the at least one skin-coupled microphone to provide said tracking information of the body area.
2. The method as in claim 1, wherein the position and orientation information is provided by at least one of an optical tracking system, an accelerometer tracking system and a tracking system worn by the user.
3. The method as in claim 1, wherein the acoustic field is produced by a mid-air haptic feedback system.
4. The method as in claim 3, wherein the mid-air haptic feedback system is coordinated with at least one of graphics provided by a head-mounted display and gestures made by the user.
5. The method as in claim 4, wherein the graphics include an interactive user interface.
6. The method as in claim 4, wherein the gestures use a palm of the user as a track-pad control interface.
7. The method as in claim 1, wherein the user is wearing one or more skin-coupled microphones.