

Motion Capture in MRI

or

MRI Compatible Sensors

Motion capture technology can be used for more than just video games! And with MoCap technology advancing daily, motion capture specialists are continuously searching for new and exciting fields where MoCap technology can be used. At the head of this exploration, and advancement, is the Measurand Company. Their ShapeWrap III full body system, ShapeHand Data Glove, and their ShapeAccelArray Geotechnical sensors have countless examples of intuitive use.

But with perhaps their most innovative endeavour to date, Measurand has recently started working with the medical community to aide in MRI research and analysis. By using plastic optical fiber laminated to an MRI compatible substrate on extended leads, the ShapeHand system can be fitted specifically for the MRI environment. The extended leads allow the electronic components to be placed outside the MRI room, and away from the magnetic field.

The ShapeHand is a portable, lightweight motion capture system of flexible ribbons that captures hand and finger motion. The data captured by the ShapeHand system precisely simulates the hand movements of whoever is wearing it, and projects a computer generated 3D image of the hand (or hands) on a screen. MRI machines are highly sensitive systems that immerse patients into a big, magnetic tube. Nobody else can see, or go inside the tube, and this makes analyzing someone inside the tube difficult. The 3D images generated by the ShapeHand system provide the watchful medical staff with the eyes to see inside these huge, magnetic systems.

One application of ShapeHand is for the subject to identify differently shaped blocks with their hands. Medical professionals could request that the subject pick-up and identify a particular shape, and would monitor the subsequent brain activity.

However, without the ShapeHand the medical professional would have no way of knowing if the subject was identifying the correct shape. What if the subject mistook a square for a triangle? With the ShapeHand, the medical professionals could trace the hand movements and ensure that the subject was doing what was asked.

There are countless other ways the ShapeHand can be used in conjunction with MRI machines. Medical professionals, to ensure the subject is pressing the right button on a touch screen and to make sure that patients are keeping their hands still, have used the ShapeHand in conjunction with a ShapeArm.

Motion capture technology possesses endless possibilities, and Measurand's cooperation with the medical community and MRI machines is a perfect example of the inventiveness the Measurand Company is known for.

To learn more about ShapeHand and MRI research check out www.motion-capture-system.com.