Justification for the purchase of a Vicon motion capture system over a PhaseSpace or Optitrack motion capture system.

Vicon (Vicon Motion Systems Ltd, <http://www.vicon.com/>)

PhaseSpace (PhaseSpace Inc, <http://www.phasespace.com/>)

OptiTrack (NaturalPoint Inc, <https://www.optitrack.com/>)

The goal of using a motion capture system in our research is to record the joint angles from every joint in a hand. Of these three potential providers, Vicon and PhaseSpace can provide the accuracy and precision needed for tracking hands and fingers. Optitrack’s hardware is meant for tracking full bodies (and multiple bodies) in space and does not have the necessary components and ability to record hands and fingers with high fidelity. Since Vicon and PhaseSpace use different technologies and have different physical limitations, the quotes from each provider are tailored to the same level of hand and finger tracking ability. The Vicon motion capture systems will cost $43,000 for a total of 8 cameras and associated hardware/software. This price is after a ~20% discount. The PhaseSpace system will necessitate 10 cameras, each priced at $5000. Even after a comparable discount, the PhaseSpace system will cost more than the Vicon system once the associated hardware and software is accounted for.

Another reason for choosing the Vicon system over the PhaseSpace system is the Vicon system will require less physical space. The cameras are more portable and need only to be placed on a ~6ft diameter circle around our volunteer subject. Due to technical limitations, the PhaseSpace system cameras will need to be placed on a ~12ft diameter circle around our volunteer subject.

As a result of the lower price and higher flexibility/portability of the Vicon system, the Neural Engineering Lab wished to pursue a purchase order for the enclosed quote from Vicon.