Motion Capture workflow

1. Capture movements
2. Clean up and label markers (deal with missing data and gaps using Vicon software)
3. Import .c3d file into Motion Builder (MB)
4. Apply mocap data to an Actor in MB
5. Import model and skeleton from MAYA
6. 'Characterize' your Maya model
7. Use the Actor as an input for your Character
8. Bake the animation (called Plot animation)
9. Keyframe, adjust and blend with other animation
10. Export finished animation and import to your scene in Maya

This is how you can start applying your sessions and refining mocap data for use in Maya. Motion Builder is a powerful keyframe animation and rigging system that also gives you real-time feedback for a complex biped or quadroped model. It's this live feedback, ready-made rig and use of mocap data that makes working in MB a fun way to animate characters.

A few quirks are the intermediate stages, applying the data to an Actor, and then having a Character Rig driven by the Actor, and then finally applying the motion to your skeleton that is a little odd. Also, you animate a bit differently, with multiple "takes" possible, and blending of several layers of animation. You can then "bake" the layers down into a single layer, do more layered animation until the movements are exactly right. When everything is just right, you will do a final "bake" or "Plot" the animation to import to your rig in the original Maya scene.

The end result is to have very life-like animation of your 3D character and to have used your own captured body motions to drive a character. This process is common in gaming, animation and the industry in general so you will have learned valuable skills that can be applied in many ways.

To get started, you will want to do the following:

1. Import a .c3d file using File>Import, use the default options
2. Play the scene to see how the points move, they should be little blue squares
3. Go to Window>Asset Browser and select the Templates>Characters folder, drag an Actor into the scene
4. Find a frame where the data is in a good T-Pose and move, rotate and scale the limbs of the Actor to match the marker placement
5. Remember, the markers are on the outside of the body, so they should be similarly placed on the Actor
6. In the Navigator, double click the Actor, then click Marker Set.. on the right, and Create a new Marker Set
7. The Actor will have numbers on parts of his body, carefully select only the correct markers and drag them to the body part. I use the Navigator to select them
8. When you make the Actor 'active' it will follow your data
9. Next, double-click the Optical data in the Navigator and look for the Rigid Bodies tag, select it and the select points to make a rigid body, such as the 4 markers on the head.
10. You should see an improvement to the Actors movements.
11. At this point, I would recommend dragging a character from the Asset Browser>Tutorials>Mia_Characerized into the scene, choose Merge>No animation
12. Look for the Character Controls, Edit>Input and select Actor. In the Character Controls check the Active box to see Mia perform your mocap

You should do the initial Tutorials to get some idea how MB is working, and get comfortable with it before importing your model. When you do decide to import, you will Export All from Maya, in FBX format (you might have to turn this on in Maya>Window>Settings>Plug-in Manager), use the defaults. You will then see some warnings which may or may not be important, and then import into MB. One thing that is important, you should import the model into MB using the Asset Browser and dragging it into the scene. The File>Import doesn't seem to work in MB for models. In the Asset Browser you may need to RMB to Add a Favorite path to find your model.

Next step is Characterizing your model, animating in Layers, Plotting animation and sending it back to Maya and render! You are only merging the skeleton animation to Maya, so you can still texture, paint weights, etc. as needed in Maya to finish it up.