**EXPERIMENTAL SETUP**

**EMG sensor placement & chair setup:**

1. Start EMG Delsys Trigno System on the computer. Open EMGWorks and EMG Utility software to acquire EMG data. Check if all the required sensors are blinking green.
2. The subject’s skin is then cleansed using alcohol and the EMG sensors are placed on the required locations using stickers. The sensor has to stick well to the skin and should not be loose (use paper tapes if required).
3. The subject then wears a knee brace for the anklebot setup.
4. The subject then sits on the chair and the leg is suspended using fabric with hooks that are attached to the knee brace. The fabric is suspended from a bar placed in front of the chair. Care has to be taken that the subject’s foot does not touch anything and completely free floating.
5. The subject then wears a special shoe that has an attachment for the anklebot and the anklebot arms are fastened to this attachment.
6. Care has to be taken that the anklebot arms are perfectly horizontal. This can be achieved either by adjusting the fabric to raise or lower the leg or by adjusting the bar on the chair on which the Anklebot is mounted.
7. The shin brace (white brace) is then attached to the subject’s shin. It is adjusted in such a way that the shin is at 90° to the foot. This setting is of utmost importance.

**Setting up the Anklebot:**

1. Turn ON the computer.
2. To start the actuators, press the START button then press the READY button.
3. On the desktop of the computer, click the icon that says “ROBOREC”. It is a foot shaped icon. This will start the Anklebot control software.
4. Adjust the Anklebot’s arms to the desired position (usually half the length of the stroke) and click CALIBRATE. This will calibrate the Anklebot and the current position is saved as the HOME position.
5. Click on MOVE HOME to check if the Anklebot holds its home position when you try to displace it.
6. Click on RECORD FROM ROBOT to record the anklebot’s motion and then click PLAYBACK to actuate the anklebot in the same recorded motion.
7. While conducting the experiment, keep the ROBOREC software running with the MOVE TO HOME position turned ON.
8. Click on ANSCALES to start the stochastic motion of the Anklebot. Set the required stiffness, damping and offset of the actuator arms.
9. To test the Anklebot, click VIBRATE ON. The Anklebot would provide stochastic motion. Click VIBRATE OFF to turn it OFF.
10. Click on LOG FILE to store the motion of the anklebot. There is a background file that you can change to add different logging times.
11. There is a static protocol on the desktop that you can run after closing everything. You can double click and select run in terminal, all of the files to change are in crob, static, imt\_logs.

**Post-Experiment:**

The files saved are in a format that cannot be directly used in MATLAB to process. Hence, they have to be converted first. There is an instructions file on the desktop.

To convert the files, go to the home folder to find the logged files. The files are saved with a name that represents the time and day when the data was saved. Go to the terminal and perform the activities as mentioned in the instructions file.