

Make sure that these rules are applicable for the setup you use.

SOP 1: Balance board preparation

1.1. Balance board hardware

- Check the distance between balance board and monitor – 1m
- Cleaning balance board (alcohol and paper towels)
- Start measurement after the electronic of the balance board is on for at least 20 minutes

CALIBRATION RULES

A) Balance board's calibration procedure is necessary only before the 1st participant of the day. **B)** The calibration procedure has to be repeated if, during the experiment, you think the balance board's measure might not be reliable anymore, e.g., the participant or you moved the balance board.

1.2. Balance board calibration via National Instruments Program

- **National Instruments Program (collects balance board data)**
 - Follow these steps (see also **Figure 2.1**):
 - On the Desktop → 2click on **NI Measurement and Automation**
 - In the top left column → Expand **My Systems** →
 - Expand **Data Neighbourhood** →
 - Expand on **your Presentation Task** → 1click on **balance board**
 - Set the **Sample rate** at **60Hz**
 - Press **ENTER** > click **Save** > **MINIMIZE** the window (**DO NOT** quit the program)

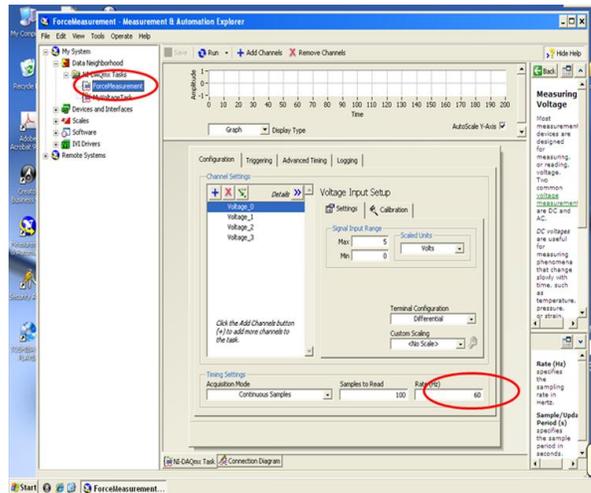


Figure 1.1 *IMPORTANT* Terminal Configurations should be RSE!

- Put a weight (e.g., 20 kg for small balance board) exactly in the middle on the balanceboard.
- **Run the Calibration Program**
 - Follow these steps (see also **Figure 2.2**):
 - Desktop → 2click on folder **calibreren**
 - 2click on the file **balance_board**
 - 1click on the **Editor** tab → 2click on the file **balance_boardSDL.sce**
 - 1click on the green arrow icon to run it

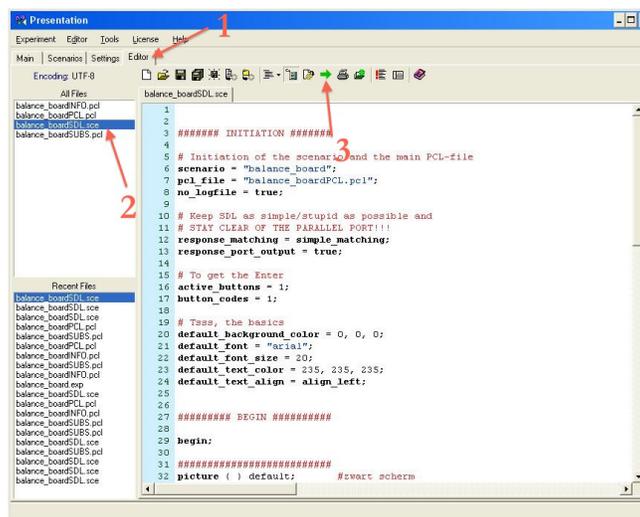


Figure 1.2

- Look at the other screen connected to the computer → it asks you to fill in some data
- For "**subject number**": Fill in random letters/numbers → press **ENTER** (no output file will be generated)
- Check the numbers (**representing the pressure registered from each sensor** at the vertices of the balance board) on the screen → they should (more or less) coincide with the numbers in **Figure 1.3a**

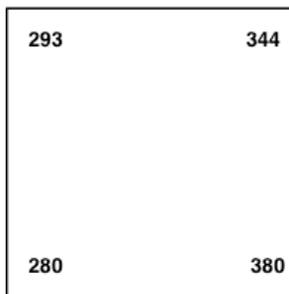


Figure 1.3a

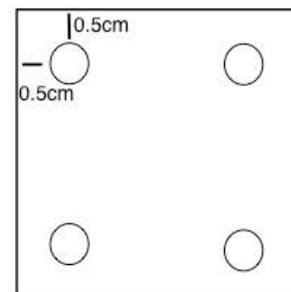


Figure 1.3b

- **IF** they (more or less) coincide → **go to**
- **IF** they do not coincide (outside a range of $-/+20$) → **go to**
 - Check that the round supporting "feet" are under the respective sensors (see **Figure 1.3b**)
 - The distance between each foot and the sides of the balance board has to be about 0.5cm (not touching the sides)
 - **IF** something is not correct → lift carefully the balance board and reposition the supporting foot again → **NOW** Check also the other supporting feet
 - Check the numbers (representing the pressure) on the screen again
 - **IF** they are correct → **go to**
 - **IF** they are not correct → **go to**
- Step with one foot on each corner of the balance board and check whether the pressure (by looking at the number) of each of the corresponding sensor increases (see **Figure 1.4**) for reference (which corners of the balance board correspond to which numbers)

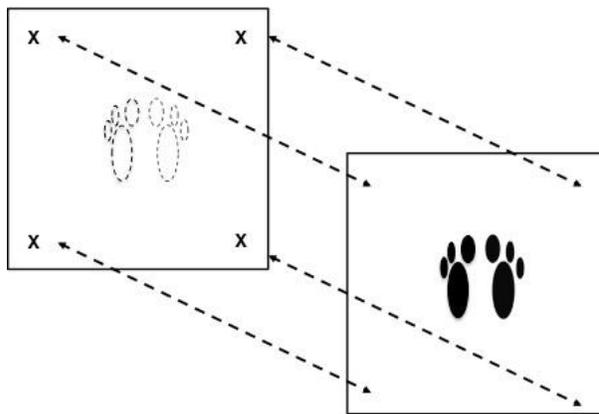


Figure 1.4

- Press **ESC** to quit the Calibration Program when you are done
- Exit from the Calibration Program window by closing all the related windows (**NOT** the National Instrument Program)

IMPORTANT: RE-SET THE SAMPLE RATE AT 800Hz (200Hz per sensor)

Go to the window of **NI Measurement and Automation** (National Instruments Program) again. Set **Sample Rate** at 800Hz press **ENTER** → click **Save** → **MINIMIZE** the window → **DO NOT** quit the program

1.3. Balance board calibration via Brain recorder (Brainvision)

Start the calibration script:

- Open BrainRecorder: Configuration → Preferences → Remote Data Access → tick Enable Remote Data Access → Ok
- Open passive viewing file:
 - o **Settings Workfile:**
 - Sampling frequency: 800 Hz
 - Low Cutoff: 250
 - High Cutoff: DC
 - No filter
- Open python program: **balance_board_cal**
- Start → All programs → Accessories → Ease of Access → Magnifier → Lens (to see just once BB1, BB2, BB3, BB4)
- When finished calibration: Set off Enable Remote Data
 - o Check that the round supporting “feet” are under the respective sensors (figure 1.2a). The distance between each foot and the sides of the balance board has to be about 0.5 cm (not touching the sides).
 - o **IF** something is not correct → lift carefully the balance board and reposition the supporting foot again → **NOW** Check also the other supporting feet

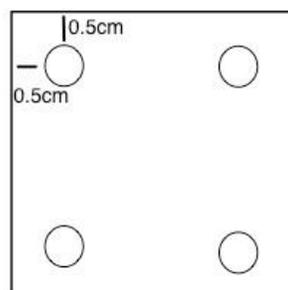


Figure 1.2a

- Check sensors by pressing slightly on each corner. Check whether the pressure (by looking at the numbers) of each of the corresponding sensor increases.

- Each sensor does not have a clear zero point for the ExG compatible platform. To get an idea of the values of the sensors without weight on it, contact Pascal de Water (p.deWater@socsci.ru.nl).
- To calibrate the platform it is important to:
 - Subtract or add the no-weight sensor values to the sensor values seen on the screen. The newly calculated sensor values should be roughly the same, within noise ratio.
 - **IF** they more or less coincide → calibration succeeded
 - **IF** they do not coincide (outside a range of -/+ 20):
 - Adapt the pressure values by turning the regulator under the second sensor, check the values again. Adapt the regulator as long as sensors roughly coincide.
 - **IF** they more or less coincide → calibration succeeded
 - **IF** it is not possible to get the sensor values roughly to coincide with each other, check whether sensor 1 and 3 go up by (for example) roughly 10, whereas sensor 2 and 4 go down by (for example) roughly 10.
 - **IF** that is the case, bring the sensor values back to the values before. This means that the sensors get roughly the same weight and the calibration succeeded.
 - **IF** that is not the case, **go to** _____