

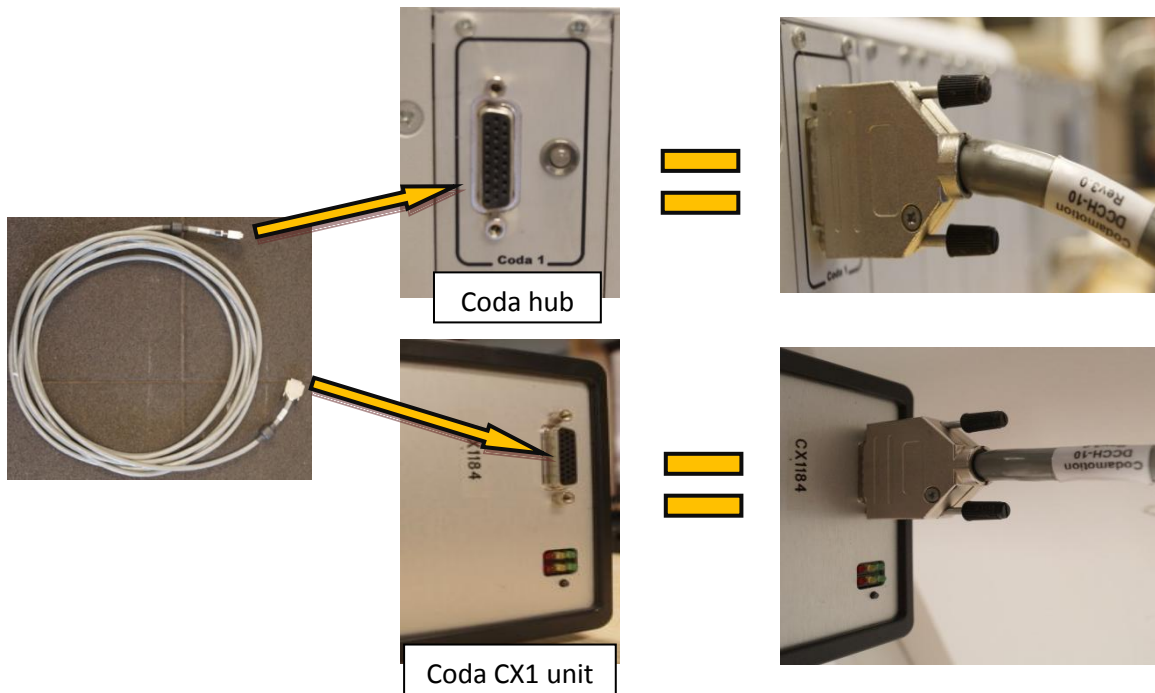
# Codamotion User Guide



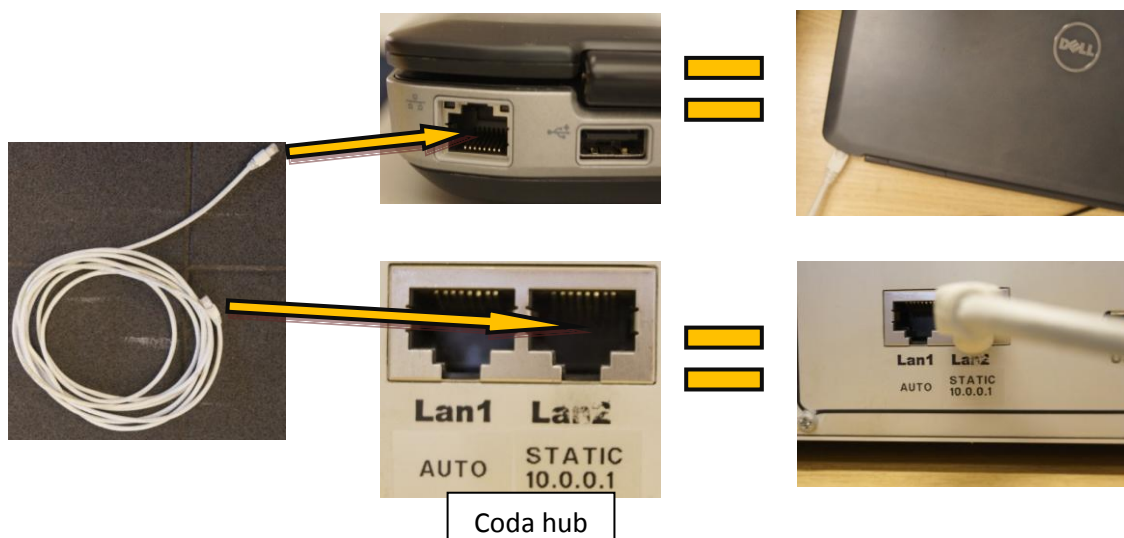
**Note:** These guidelines apply specifically to using the equipment in RB01 (teaching lab).

# Equipment preparation

1. Charge drive boxes and clusters (1 hour charge = several hours testing).
2. Position Coda CX1 units
  - Must be  $\sim$ 1.5-4.5m from markers
  - Must be able to see all markers
3. Connect grey cable from Coda hub into Coda CX1 units.



4. Connect Ethernet cable from Coda hub into laptop.



5. Remove the three black cover caps from each Coda CX1 unit.
  - Please replace at end of session

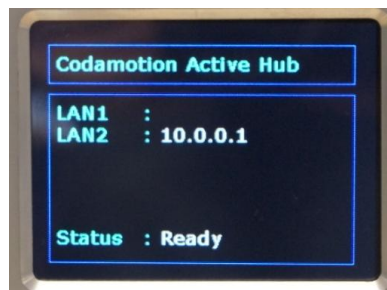
6. Connect cable from Coda hub to force plate amp.



7. On wall amp, adjust amplifier gain settings to 4000 (i.e. set switches 3 and 4 to 'open' for all channels).

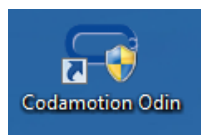


8. Switch on wall amp.
9. Switch on Coda hub, and wait for 'ready' display.

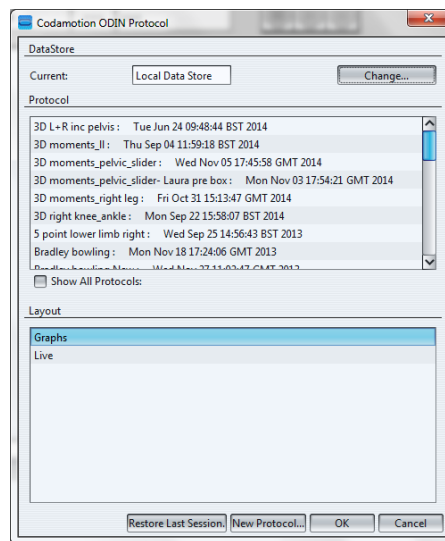


## Software preparation

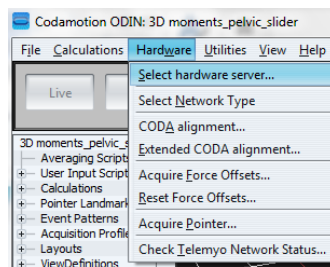
1. Open Codamotion Odin software.



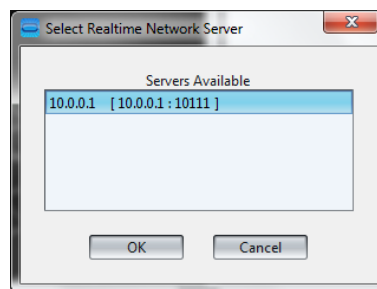
2. Select desired protocol → OK



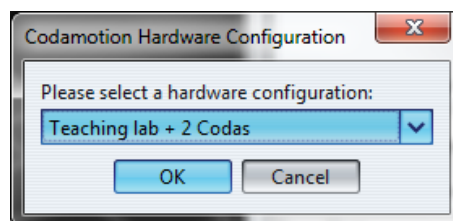
3. Hardware → Select hardware



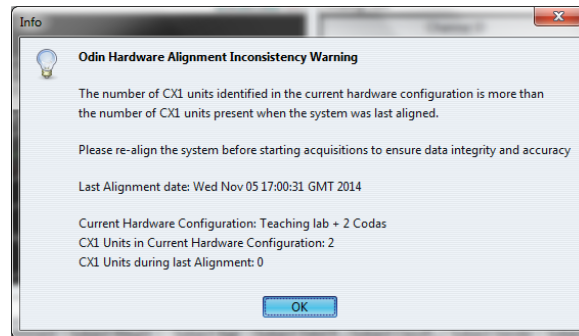
4. IP address message **must** appear (if not, check connections) → OK



5. Codamotion hardware configuration list → Select an option from drop down menu (e.g. teaching lab force plate + 2 CODA units) → OK.

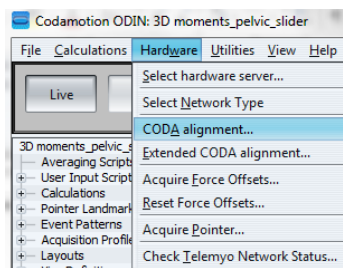


- Ignore 'Odin Hardware Alignment Inconsistency Warning' as you need to align each time (i.e. just click OK).

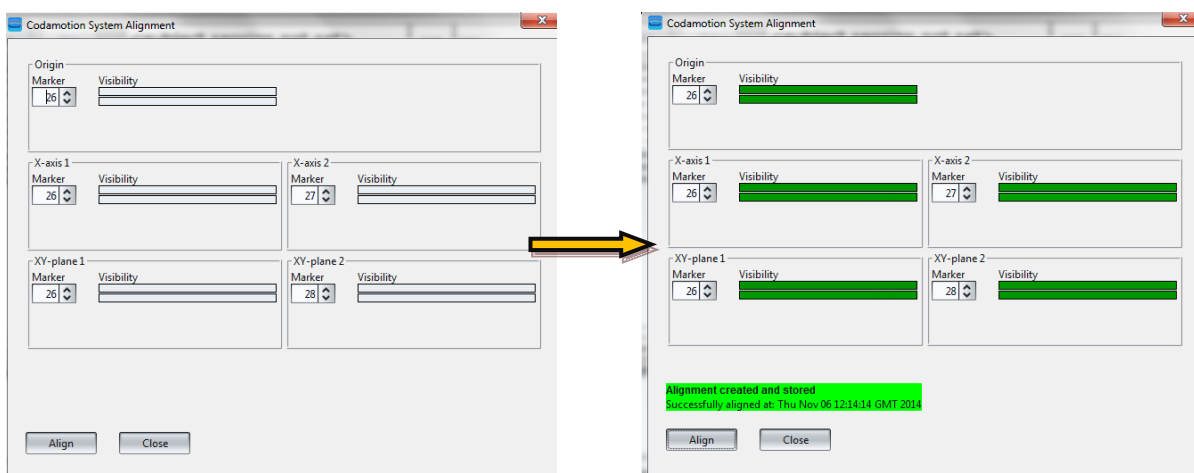


## 7. Alignment

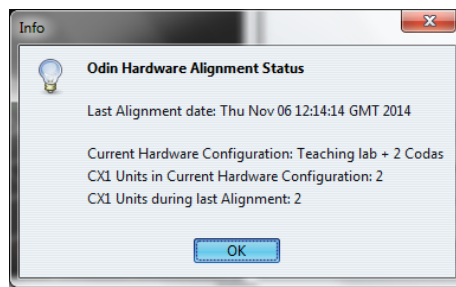
- Hardware → CODA alignment



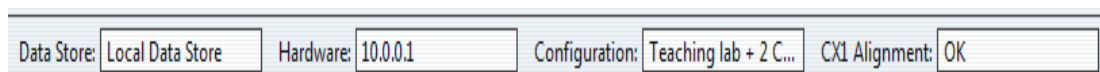
- Collect the drive box with markers 25-28 (i.e. Left foot drive box)
  - Marker 26 (i.e. slot one) = Origin (= Centre of force plate).
  - Marker 27 (i.e. slot two) = x axis (= Right of force plate towards the TV).
  - Marker 28 (i.e. slot three) = y axis (= Forward of force plate, towards office).
    - Slot zero remains empty.
- Click Align → Close



- When 'Odin hardware alignment status' box opens check details → OK



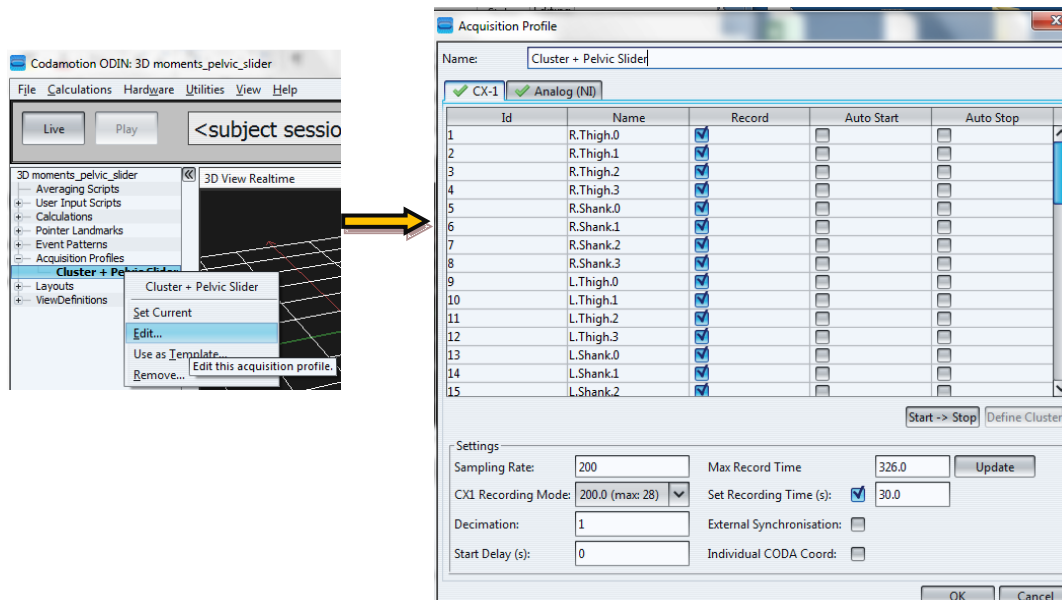
- Check bar at bottom of screen is as follows;



Note: This box will vary depending on the Codamotion hardware configuration you selected

## Marker placement and acquisition

1. Click 'acquisition profile' → Right click cluster + pelvic slider → Click edit to identify which markers go where and set recording time.



2. Collect and position correct markers.

E.g. Lower body markers

a. Feet (using black drive box and wire markers):

Right foot (drive box 23-26)

- Drive box → Bottom of shank.
- Marker 23 (i.e. slot zero) → Right heel.
- Marker 24 (i.e. slot one) → Right 5<sup>th</sup> MTP joint.
- Marker 25 (i.e. slot two) → Right top of foot.
  - Slot three remains empty.



Left foot (drive box 25-28)

- Drive box → Bottom of shank.
- Marker 26 (i.e. slot one) → Left heel.
- Marker 27 (i.e. slot two) → Left 5<sup>th</sup> MTP joint.
- Marker 28 (i.e. slot three) → Left top of foot.
  - Slot zero remains empty.



b. Legs (using clusters strapped vertically to body segment):

- Cluster A → Right thigh
- Cluster B → Right shank
- Cluster C → Left thigh
- Cluster D → Left shank



c. Pelvis (using pelvic frame)

- Rest pelvic frame on pelvis area and secure with Velcro (and tape if necessary).

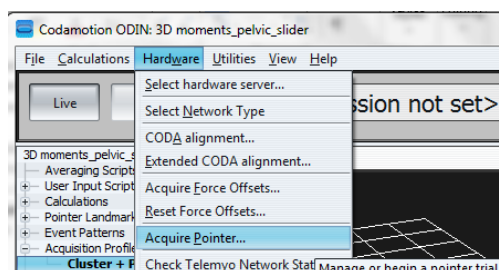


KEY:

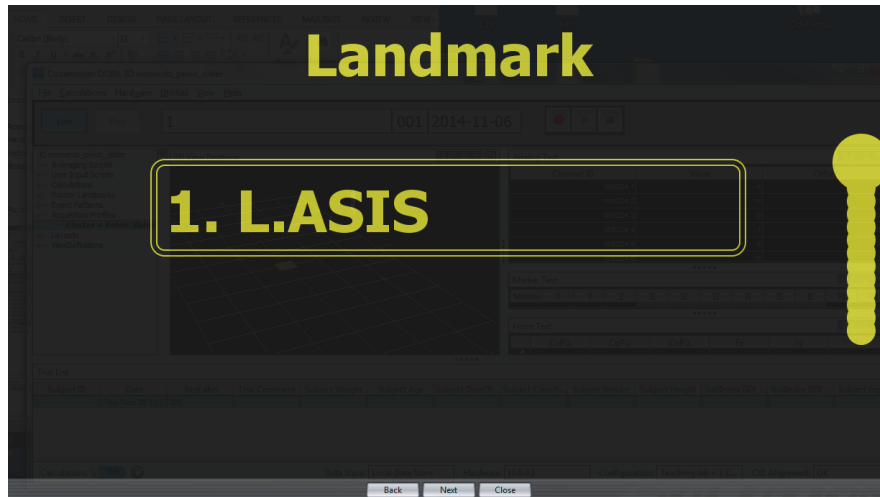
- Ensure receiver domes on drive boxes, markers and clusters are visible to Coda CX1 units (i.e. not occluded by tape, clothing, other equipment, etc.)
- Always secure loose wires with tape - And be careful when removing from participant.
- Clusters must be strapped as tight as comfortable.
- Ensure all clusters and drive boxes are switched on.

3. Acquisition of body landmarks

- Hardware → Acquire pointer



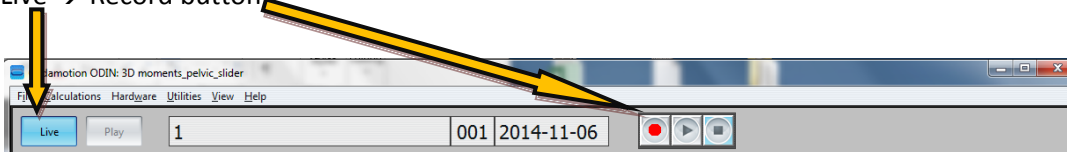
- Aim pointer at desired landmark (following onscreen prompts) → Hold down clicker (light flashes on Coda CX1 unit, hold down clicker until light disappears).



- E.g. lower body landmarks
  - L. ASIS = Left anterior superior iliac spine (pelvis bone)
  - L. Calcaneus = Back of left heel.
  - L. FMT = Left first metatarsal (opposite to 5<sup>th</sup> MTP marker)
  - L. Lateral femoral epicondyle = Outside of left knee
  - L. Lateral malleolus = Outside of left ankle
  - L. Medial femoral epicondyle = Inside of left knee
  - L. Medial malleolus = Inside of left ankle
  - Repeat for landmarks on right side of body.
- 4. Enter participant information at the bottom of software (height, weight, age, D.O.B., etc.) **BEFORE** collecting data.

## Data collection

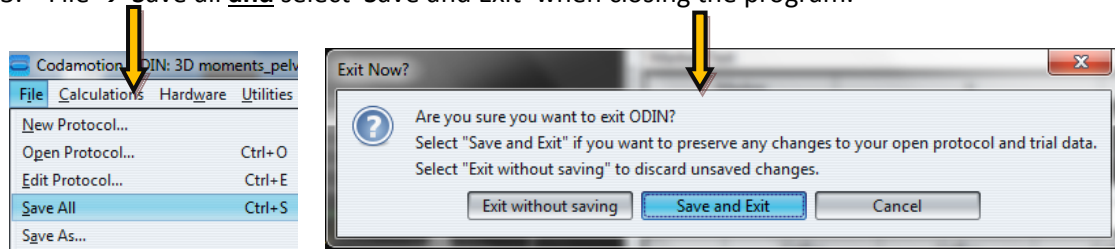
1. Live → Record button



2. Play mode → Play through to check tracking
  - If trial did not track correctly, remove from trial list.
  - Make a note of which rep trials are good (i.e. tracked correctly) so you can easily return to them.

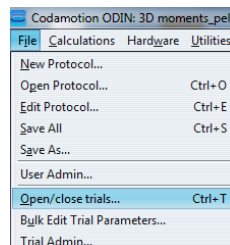


- File → Save all **and** select 'Save and Exit' when closing the program.

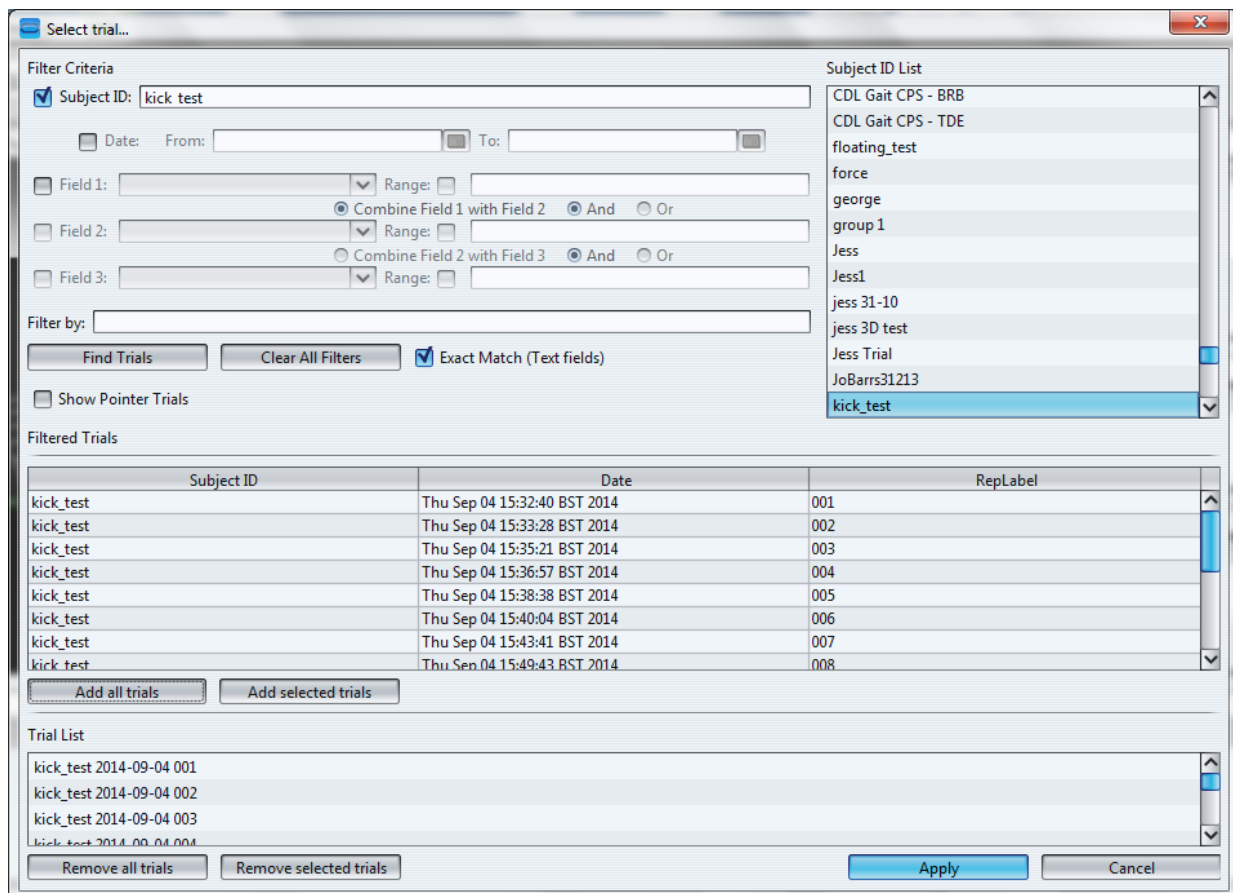


## Opening previously saved trials

- File → Open/close trials.



- Select correct trial from 'Subject ID List' → Trials under this ID will then appear in 'Filtered Trials' box → either 1) 'Add all trials' or 2) 'Add selected trials' → Added trials will then appear in 'Trial List' box → Click Apply to open



# Troubleshooting

1. To overcome issues with marker alignment/detection try;
  - Draw curtains, close doors, switch off lights.
  - Close marker box/remove other drive boxes from the room to avoid interference.
2. If you encounter an error whilst acquisition of body markers;
  - i. Hardware → Acquire pointer → Tick the landmarks you are missing → Redititise.