Digitisation Procedure

Before you start digitising

- Load your correct project and settings.
- Choose the correct Subject ID (for new subjects: last ID plus 1).

Preparing for digitisation

- It is essential that the plastic glasses remain absolutely stable throughout the digitisation process.
- Make sure the glasses are in a stable position, and **tighten the strap** of the glasses as much as conveniently possible.
- **Fixate the cable** leading to the glasses with tape, either on the back rest or the arm rest of the chair. This will reduce the force on the glasses.
- **Keep metal objects and electronic devices away** from the digitiser (e.g. remove mobile phones and keys from your pockets; remove wrist watches and rings etc.).
- It is better to digitise some points (e.g. landmarks or electrodes) with a small error than to move the goggles during digitisation.

Digitisation Procedure

- Check the grey Polhemus box is on (a small green light will be lit) if not switch it on by the large black switch on the back and wait for the green light to stop flashing.
- In the acquisition program on the computer select the final "change" button marked 'digitise HPI'.
- Check the receiver is in the back of the chair, with the cable pointing downwards.
- Position the goggles on the subject's head, being careful not to cover up any electrodes or HPI coils. It is critical that the goggles are stable and do not move once digitisation has begun.
- Go back to the computer and, at the top of the new window in acquisition, click on the "Coordinate frame alignment" button; you are now ready to begin digitisation.
- Make very sure that the cable from the digitiser pen stays at least 15cm away from the transducer at the back of the chair.
- In any order, digitise the three cardinal landmarks (nasion, right and left pre-auricular points, see below): Place the stylus, keep it stable, click the button, and wait until it has beeped before moving the pen away from the head. You can monitor the progress on the computer screen.

Make sure the goggles do not move while digitising. Minimise the participant's head movements as much as possible. Strap the cable leading to the goggles to the chair. Do not talk with your participant more than necessary whilst digitising.

- After the third point has been digitised, you will hear two beeps instead of one—this is simply to indicate that you are done digitising this section. If at any point during the digitisation of the different sections you hear two beeps (*before* the last point), you have accidentally pushed the stylus button twice and should start over. Instructions on how to do this are below.
- To move on to the next section (HPI coils), there is no need to click anything else; you will simply be prompted to begin digitising HPI.
- Digitise the five HPI coils in any order. Be *very* careful when digitising these points, as they can come back to haunt you later if not done properly the first time!
- At this stage, you may already "check" the HPI coils again (and then again at the end), by clicking the stylus button at a distance from the head, then manually choosing the next options. This ensures digitisation is working properly.
- Next, if using the EEG cap, **digitise the electrodes *in order***, starting with the reference electrode. Place the pen into the centre of the electrode close to the participant's skin.
- Monitor progress on the computer screen – make sure you digitise electrodes in the correct order.
- Once completed please **wipe the pen** before digitising any facial points and refill the electrodes with gel.
- If not using the cap, you will *not* be prompted to digitise any electrodes.
- You will then be asked to digitise additional head points. The headshape should consist of about 50 points evenly distributed across the head (capturing the most important curvatures in the front and back of the head).
- When finished, hold the stylus about a meter away from the subject and press the button.
- If at any point you should make a mistake, you can hold the stylus away, press the stylus button, and then click on the button at the top of the section you would like to do again.
- A selection box will appear with the choices 'check', 'redo' or 'help' select either 'check or 'redo' and take the HPI points again.

Finally:

Check the localisation of the HPI coils using the "check" option. All digitisation errors should be within 3mm.

Landmark Points

Right PA

Nasion

Mark the lowest indention above the crown of the nose.

Left PA