

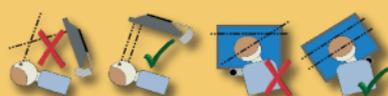
# Positioning

To ensure accurate computer control, the device must be calibrated before first usage or after every change of environmental conditions (e.g. new glasses, position, illumination of the room).

## 1

### Locate

- Start IntelliGaze by double clicking the icon on the desktop.
- Open Operation Center by touching the display for 2 seconds.
- Place camera 65 cm away from the users head and adjust the display parallel to the head of the user. If the user looks straight, the gaze should be slightly below the top of the display.
- Rotate, shift, tilt the monitor until the smiley is centered.



Smiley is green and centered?

No

Yes

## 2

### Stabilize

- Verify that the smiley stays green if the eyes move.
- Hold your finger in each corner of the screen and ask the user to look at your finger while you move the finger in the corners of the display. Make sure to not cover the camera.

Smiley is green and centered while users looks on the corner of the display?

No

Yes

## 3

### Calibrate

- Start the calibration by pressing Ctrl+F5 on the keyboard or touch the calibration button in the operation center.



Calibration succesful?

No

Yes

## 4

### Interact

- Start the application or let the user now control the PC.
- Observe if the user is able to perform all desired tasks.
- Repeat the calibration if the accuracy seems bad, make sure that 1 and 2 are still ok.

## Trouble-Shooting "Locate"

- **Problem:** Smiley is yellow or red.  
Solution: Distance between display and head is too small or too large.
- **Problem:** Yellow triangle with exclamation mark instead of an eye.  
Solution: Make sure if the eye is wide opened and that no reflections are covering the pupil.
- **Problem:** The smiley is changing its color from red over yellow to green although the head is stable.  
Solution: A tracking problem exists. Change the location of the camera while using the camera view. Open the view with the keyboard shortcut Ctrl+F10:



Camera view

### Ensure:

- Pupil is clearly visible.
- 2 tiny white dots below the pupil.
- Both eyes are visible.



Camera view

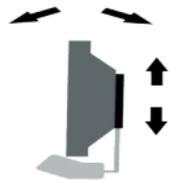
### Avoid:

- Pupil covered by eyelid or disturbance reflection on glasses.
- The two tiny white dots are not visible.
- Reflections on glass, rim or ventilation mask.
- Two tiny white dots on sclera.

## Trouble-Shooting "Stabilize"

- **Problem:** The smiley is not green and stable while the users looks in the corners of the display.  
Solution: You need to change the location of the camera:

- The eyes must be clearly visible as in the image above in every corner of the screen before starting a calibration.
- Tilting display can move disturbance reflections out of the pupil.
- After tilting the display you might need to shift the display to bring back the smiley in the center.



## Trouble-Shooting "Calibration"

- **Problem:** Calibration offers the option "improve".  
Solution: There are one or several points which were not properly calibrated. These points can be re-calibrated.
- **Problem:** The calibration fails or a couple of points could not be calibrated.

Solution: Repeat the calibration with the calibration option wait for valid data turned on. Change that option in the preferences (Ctrl+F10) Wait for valid data will wait at each point as long as the user needs to fixate the target. This option increases the chance of a successful calibration for users which have difficulties to hold a fixation for a longer period. If the calibration stalls at a point you can press the space bar to accept even unstable data at this point and proceed with the next point. Recalibrate if the cursors seem inaccurate. Go through step 1-3 to get the best calibration results.

