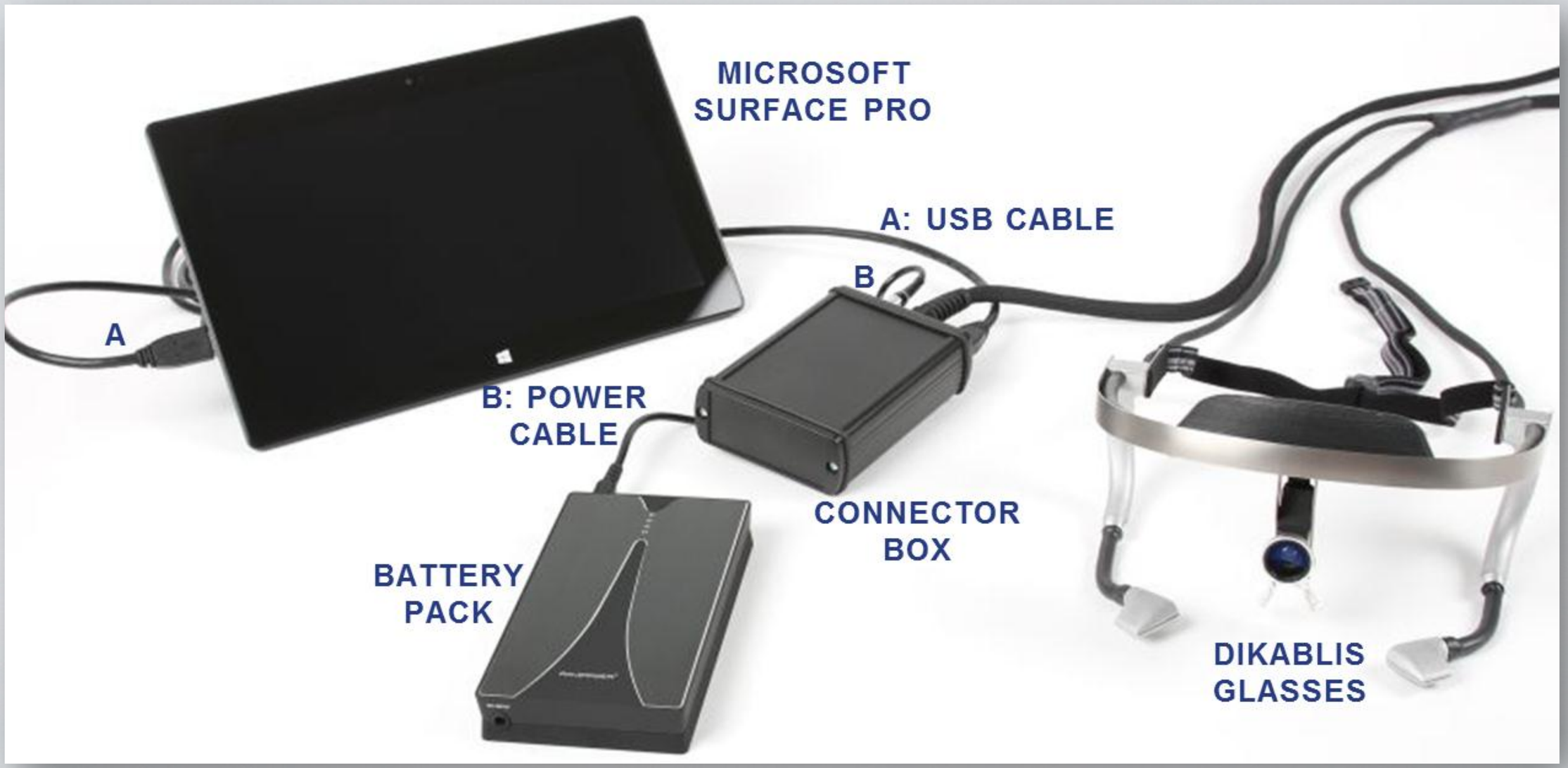
DIKABLIS EYE-TRACKER & D-LAB SOFTWARE

CONTENT

- Hardware
- Software
  - Minimal Steps
  - PLAN
  - MEASURE
  - ANALYSE

HARDWARE

- [x] Hardware
- [ ] Software
- [ ] Minimal Steps
- [ ] PLAN
- [ ] MEASURE
- [ ] ANALYSE



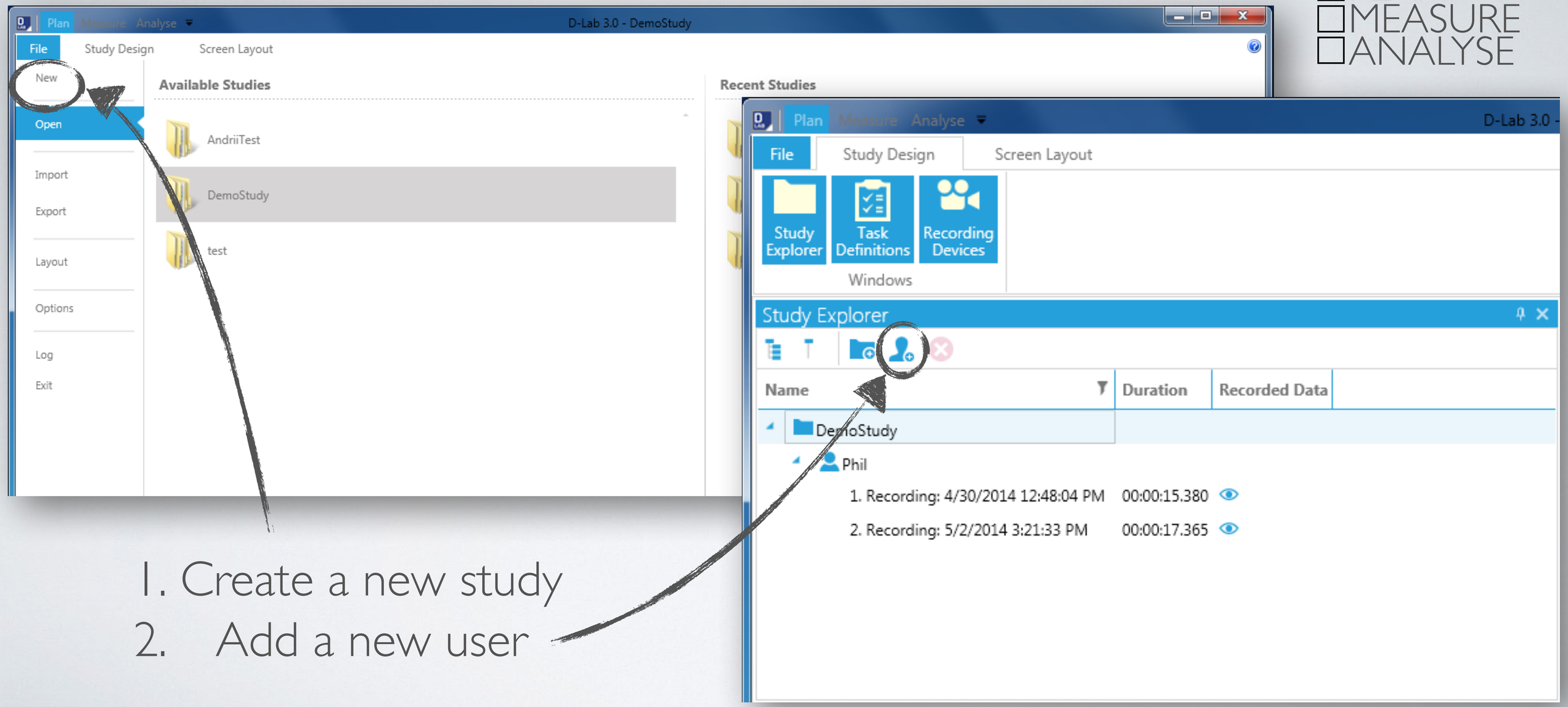
SOFTWARE

☐ Hardware
■ Software
☐ Minimal Steps
☐ PLAN
☐ MEASURE
☐ ANALYSE

- Uses a modular approach
- PLAN: Manage setup and define tasks
- MEASURE: Record data and mark tasks
- ANALYSE: Review recording and calculate information

MINIMAL STEPS

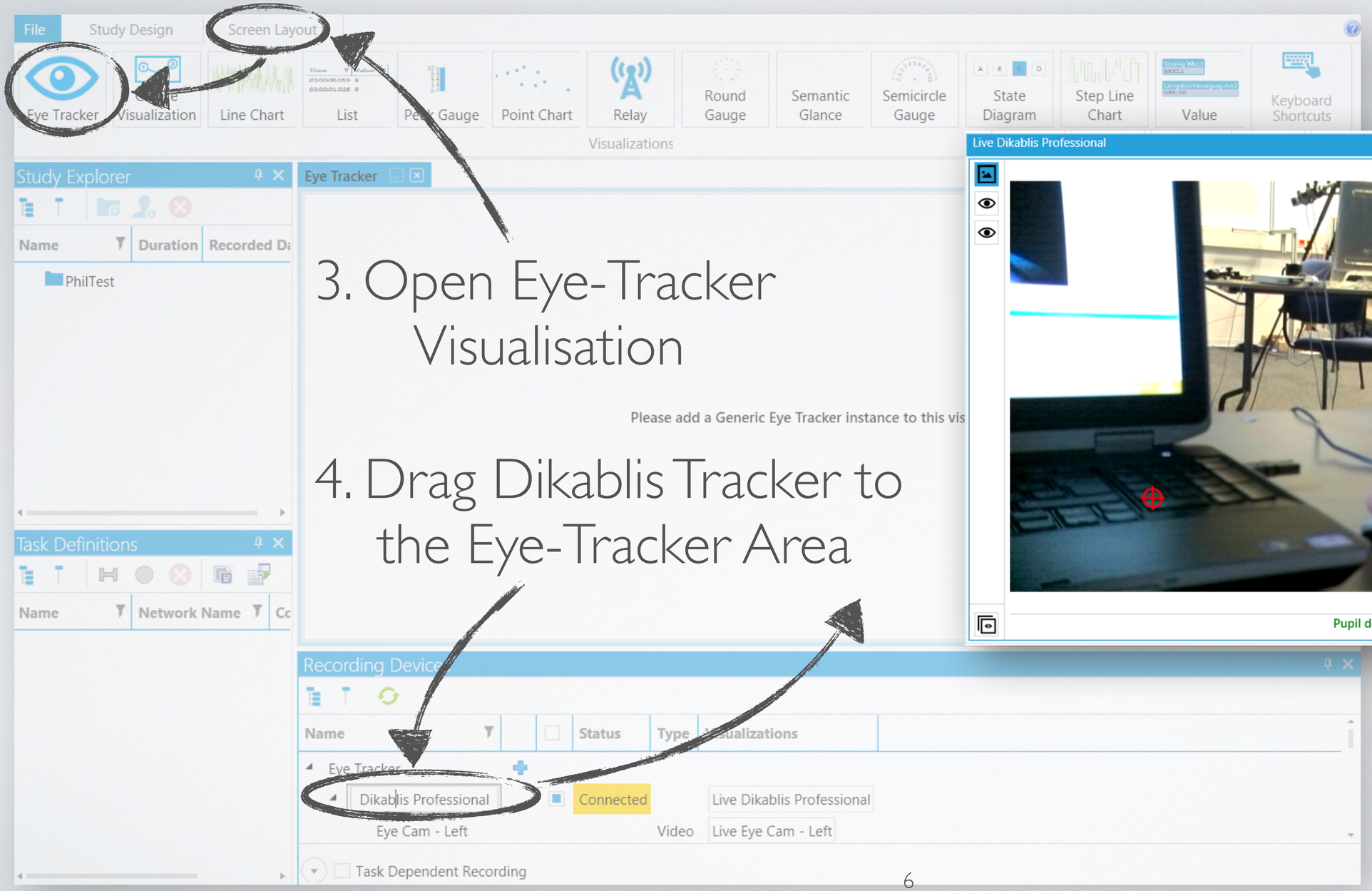
- ☐ Hardware
- ☐ Software
- ■ Minimal Steps
- ☐ PLAN
- ☐ MEASURE
- ☐ ANALYSE



1. Create a new study
2. Add a new user

MINIMAL STEPS

- [ ] Hardware
- [ ] Software
- [x] Minimal Steps
- [ ] PLAN
- [ ] MEASURE
- [ ] ANALYSE



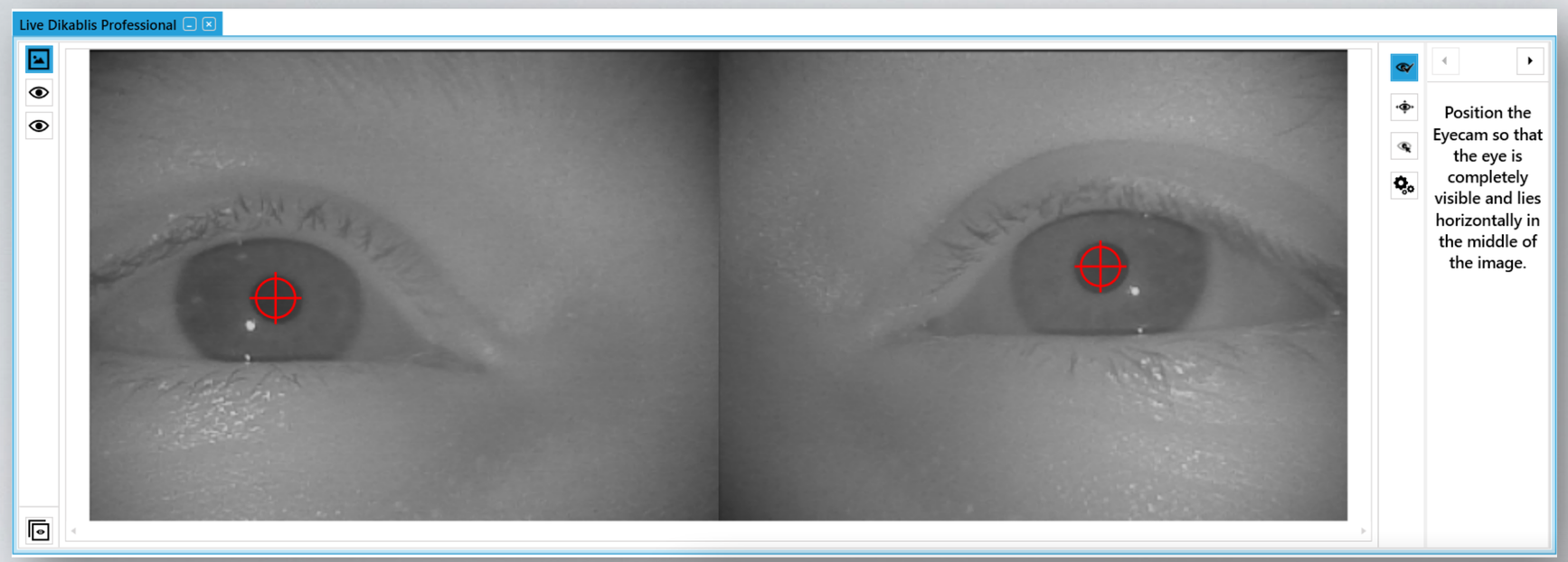
3. Open Eye-Tracker Visualisation

4. Drag Dikablis Tracker to the Eye-Tracker Area

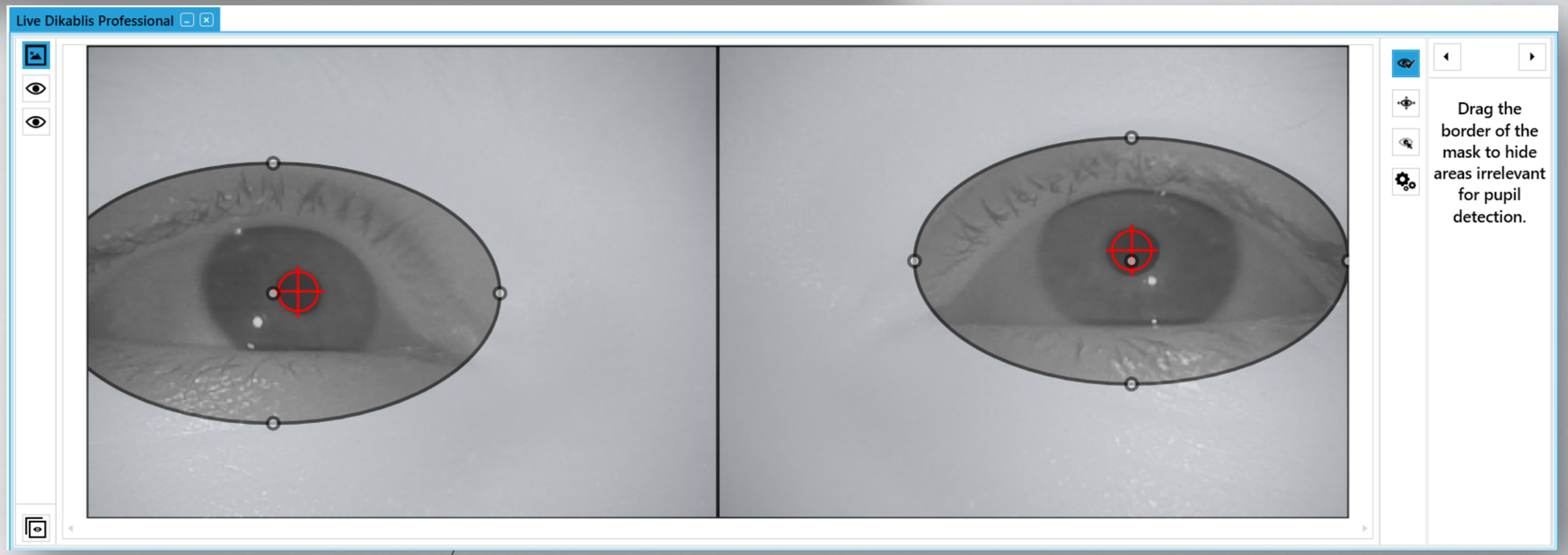
5. Start Calibration

MINIMAL STEPS

- [ ] Hardware
- [ ] Software
- [x] Minimal Steps
- [ ] PLAN
- [ ] MEASURE
- [ ] ANALYSE



6. Adjust Eye Camera

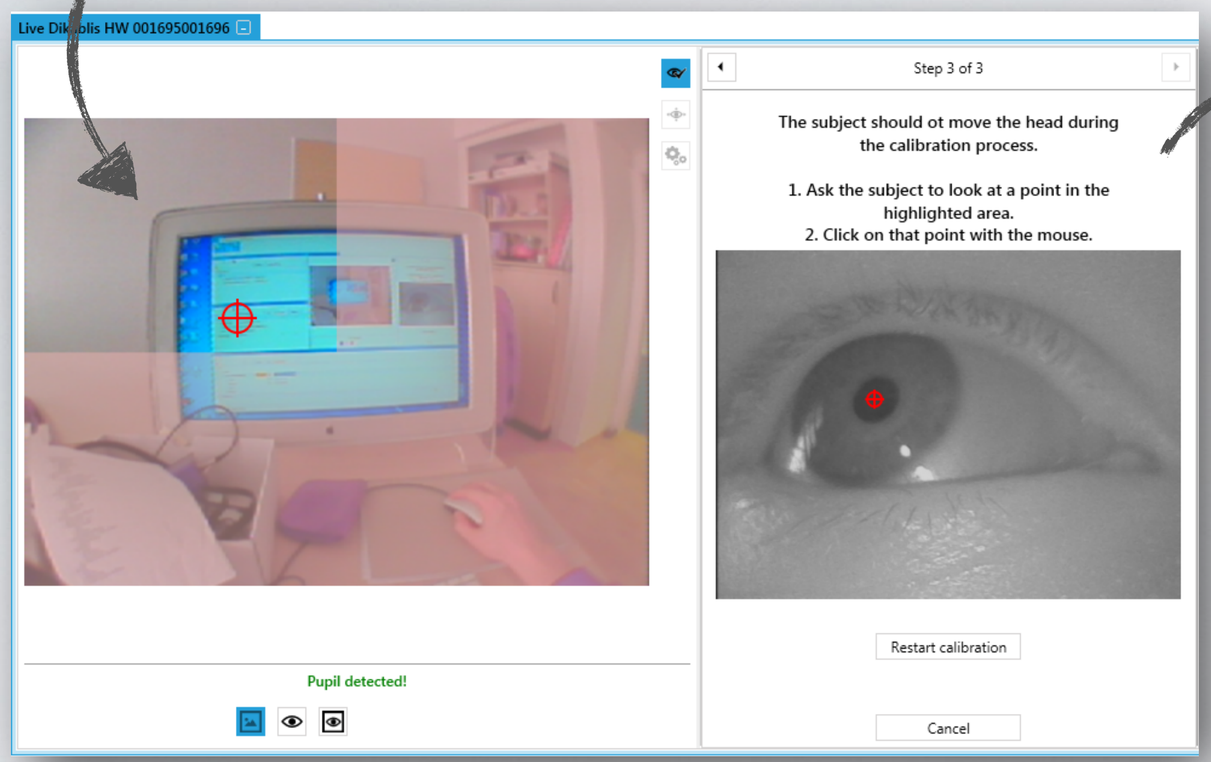


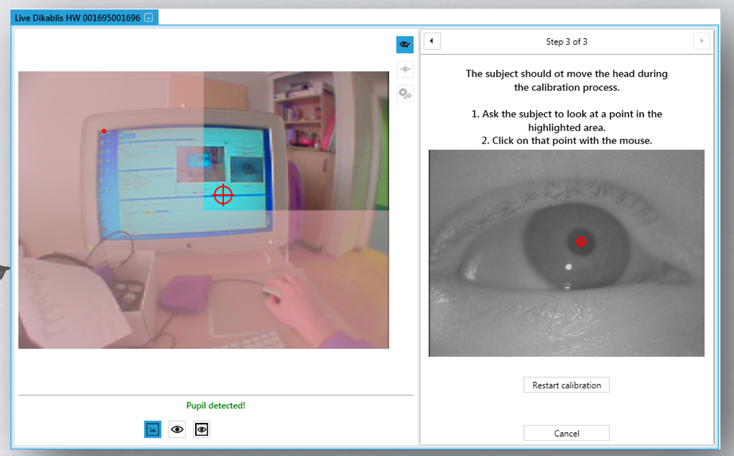
7. Mask Eye Area

MINIMAL STEPS

- [ ] Hardware
- [ ] Software
- [x] Minimal Steps
- [ ] PLAN
- [ ] MEASURE
- [ ] ANALYSE

8. Mark in each quarter of the screen where the user is looking





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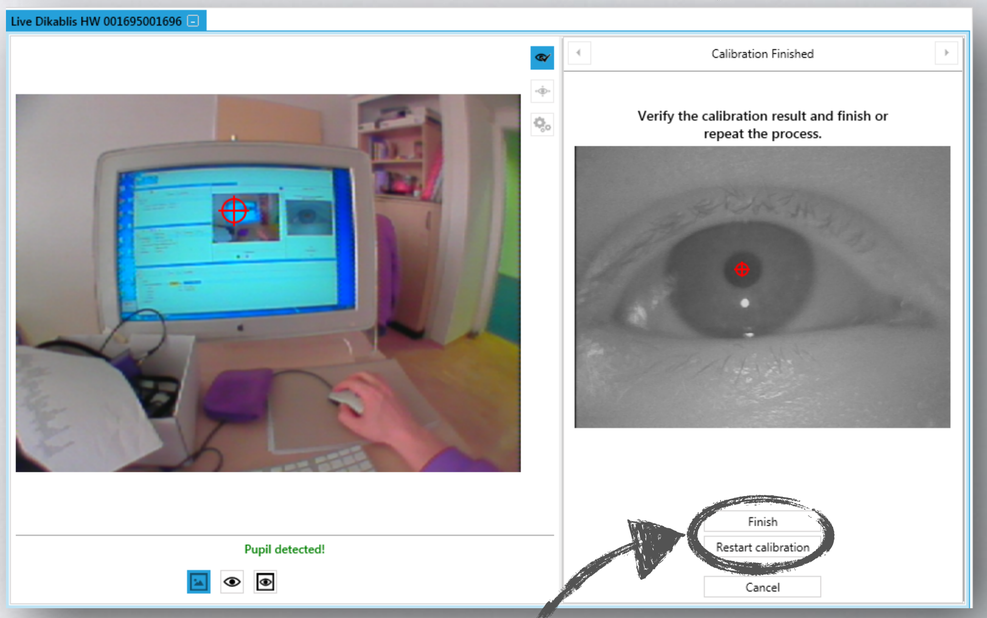


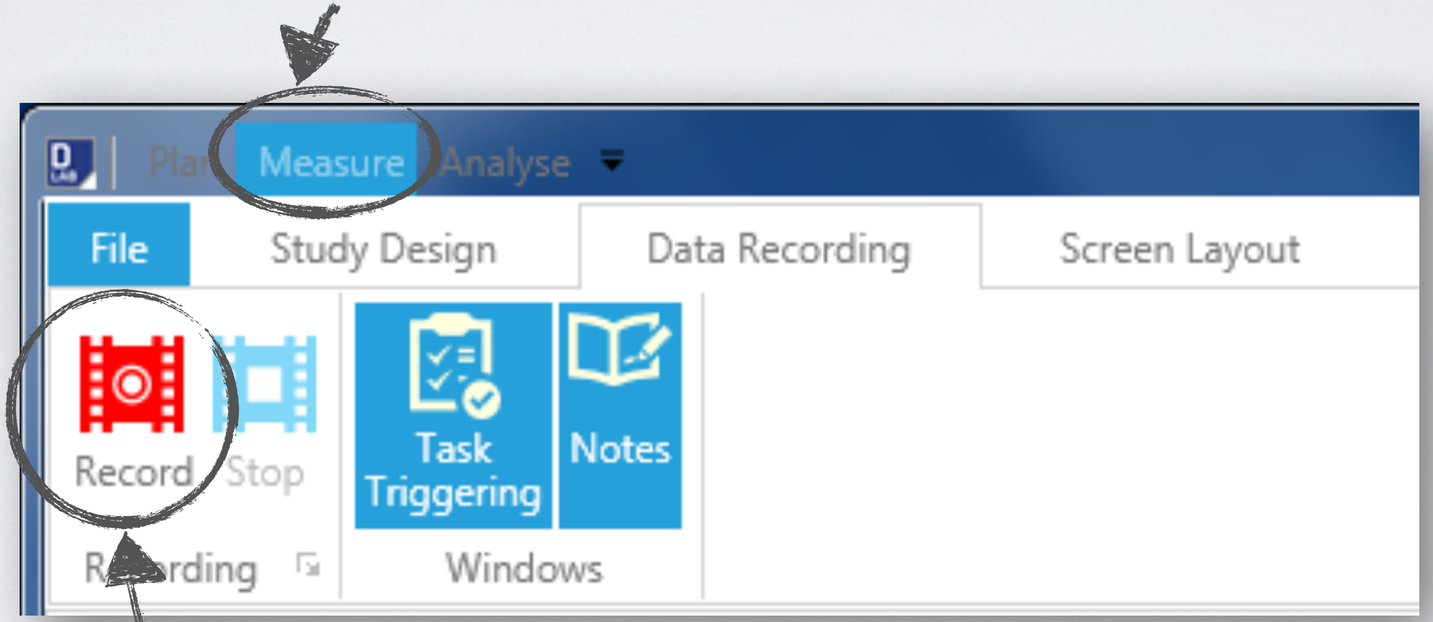
IMPORTANT: The head should be as still as possible to provide an accurate calibration!

9. Finish calibration

MINIMAL STEPS

- ☐ Hardware
- ☐ Software
- ■ Minimal Steps
- ☐ PLAN
- ☐ MEASURE
- ☐ ANALYSE

10. Switch to the *Measure* tab



11. Start recording

MINIMAL STEPS

- ☐ Hardware
- ☐ Software
- ■ Minimal Steps
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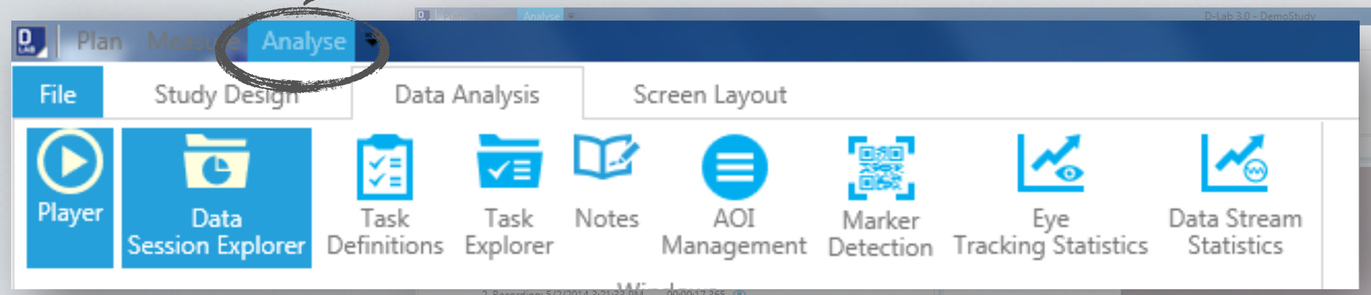
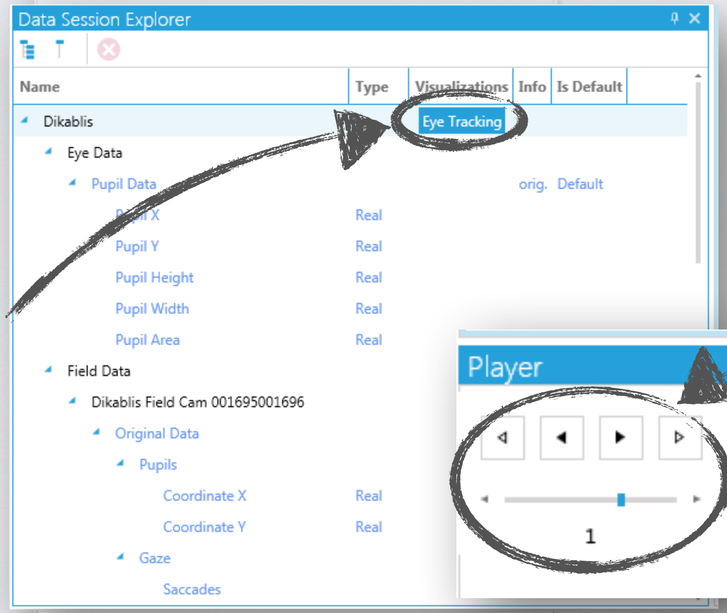
- ☐ ANALYSE

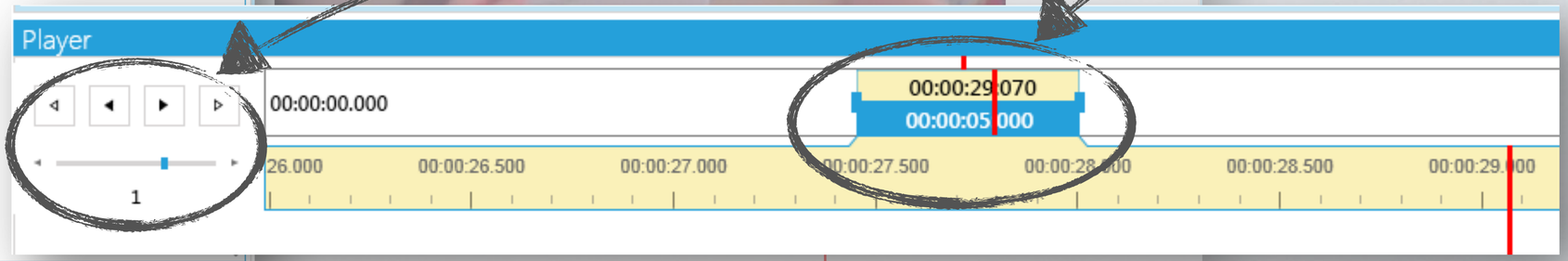
12. Switch to the *Analyse* tab



13. Open Eye-Tracker visualisation



14. Navigate recording using the controls and timeline



MINIMAL STEPS

- Hardware
- Software
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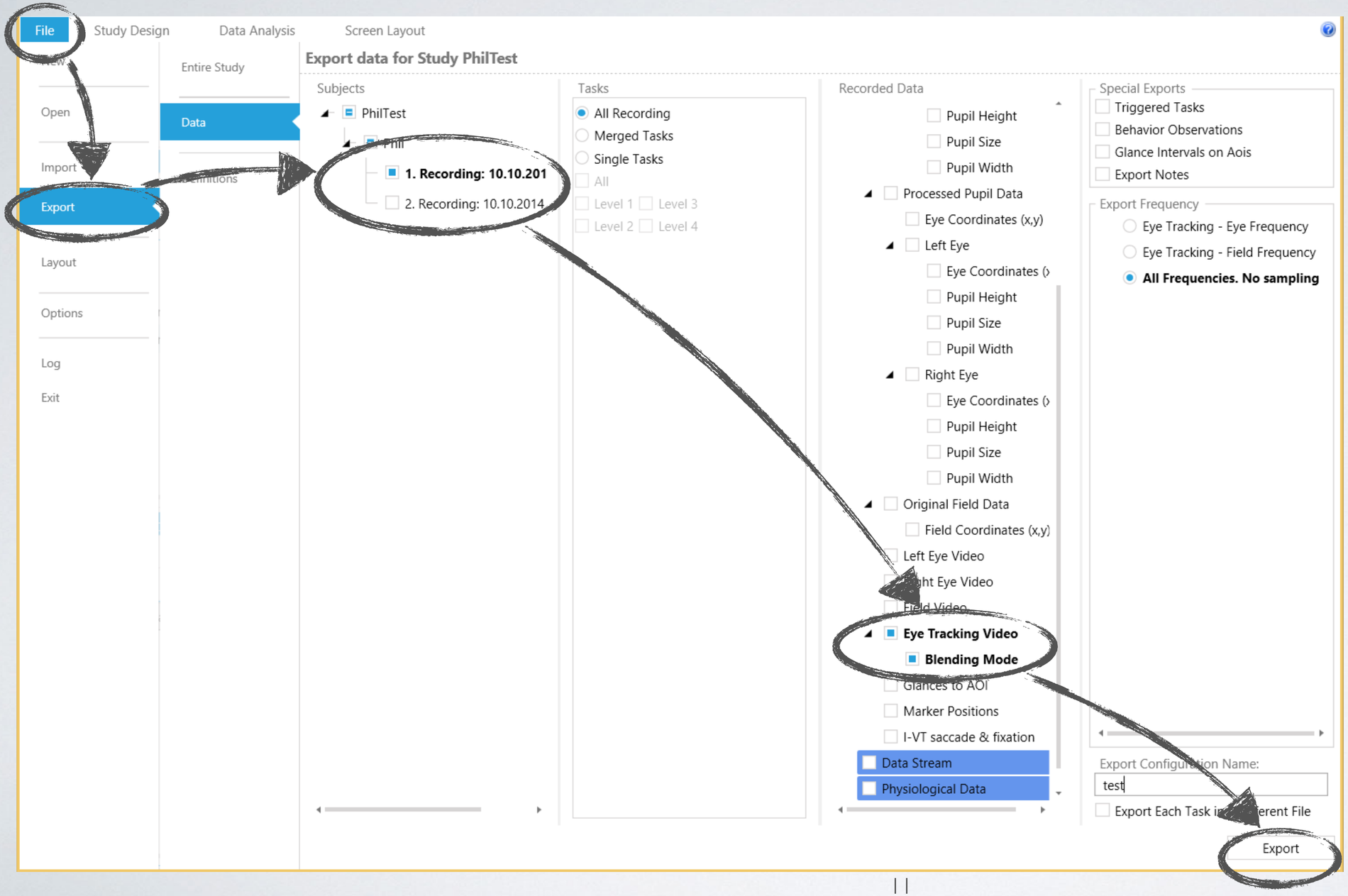
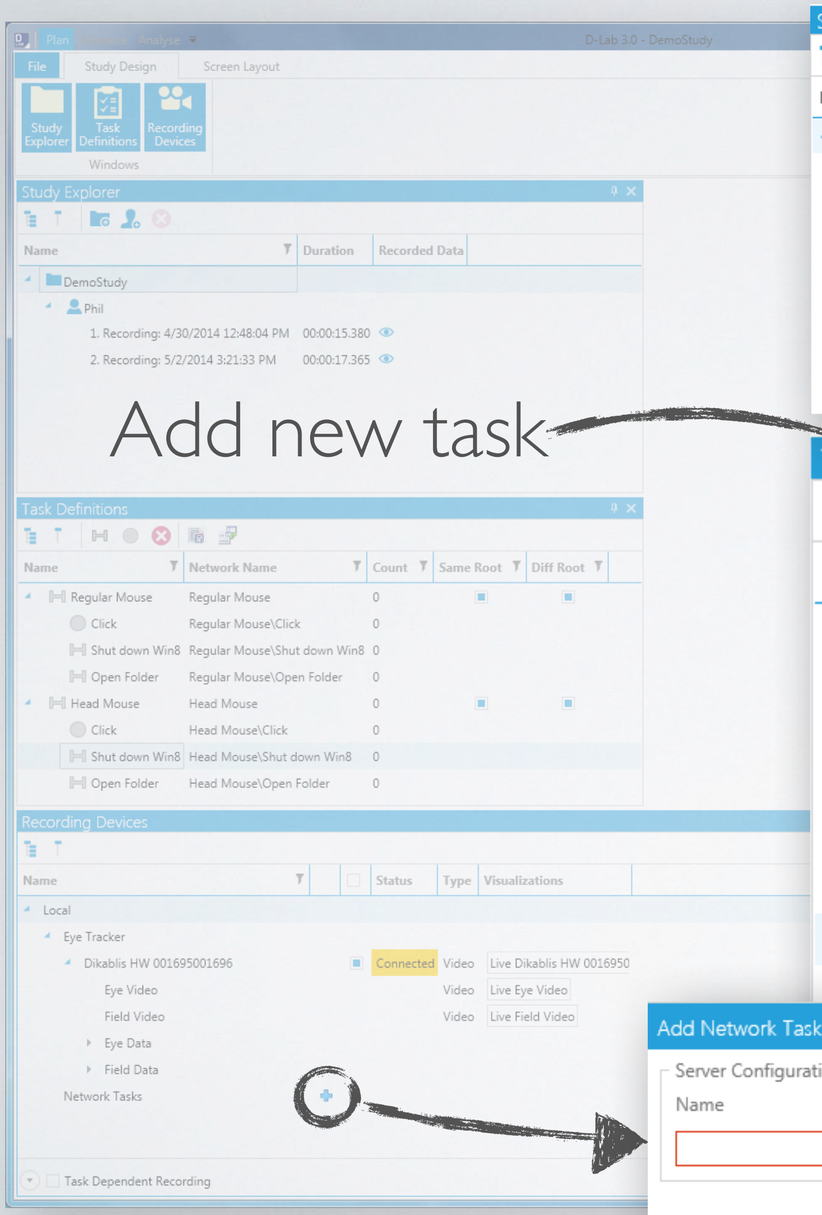
- PLAN
- MEASURE
- ANALYSE

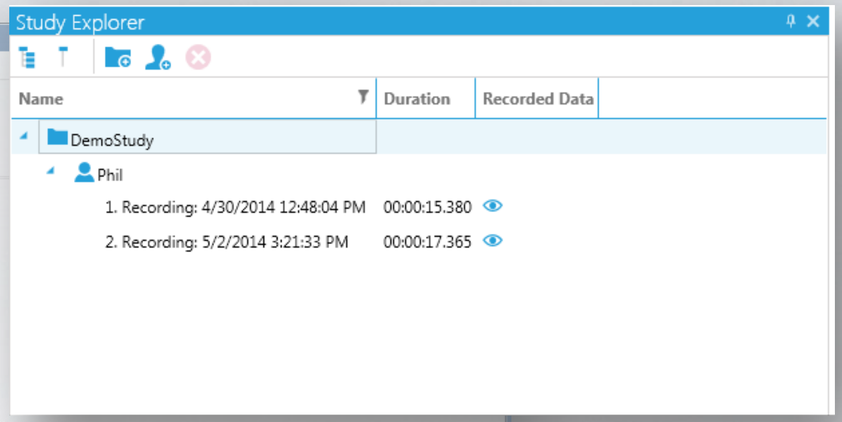


15. Export video to C:/data

PLAN

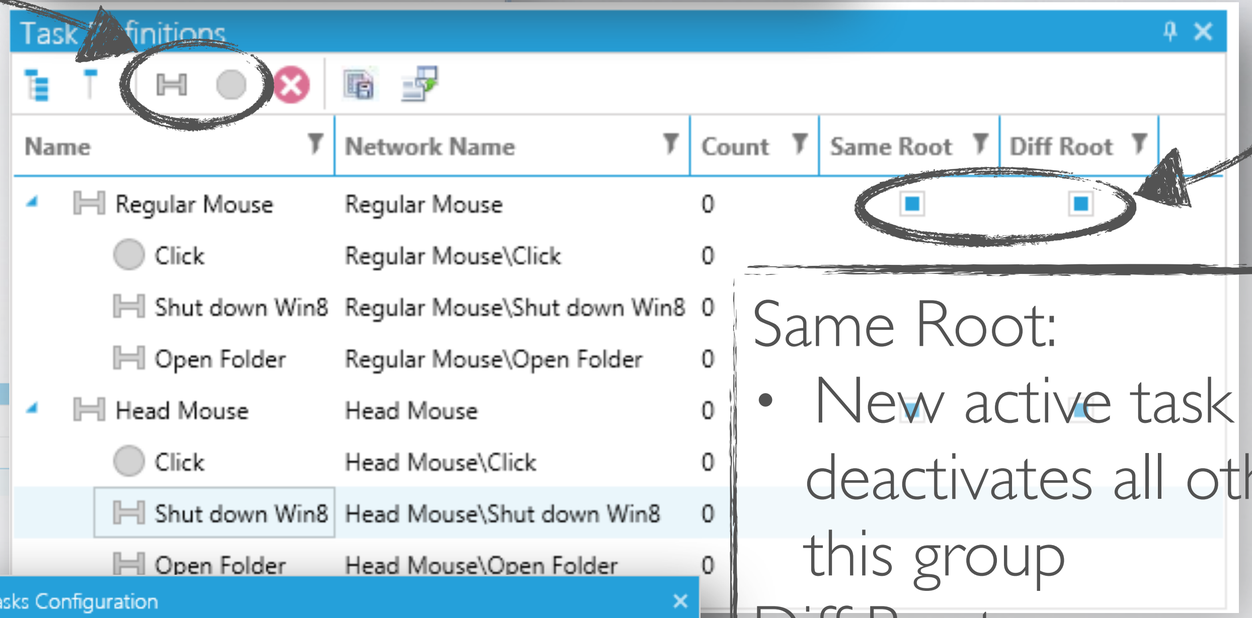
- ☐ Hardware
- ☐ Software
- ☐ Minimal Steps
- ■ PLAN
- ☐ MEASURE
- ☐ ANALYSE

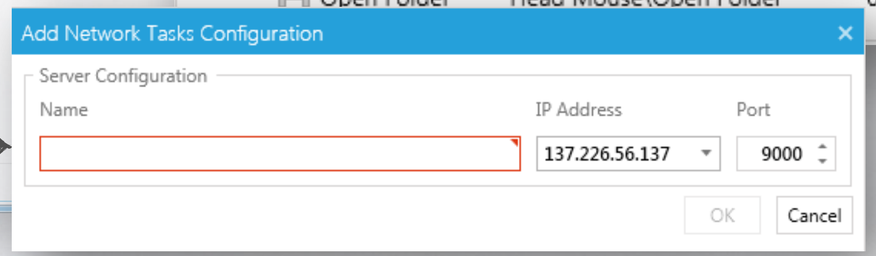




Add new task

Define marking behavior





Same Root:

- New active task in a group deactivates all other active tasks in this group

Diff Root:

- New active task in another group deactivates all tasks in this group

MEASURE

- ☐ Hardware
- ☐ Software
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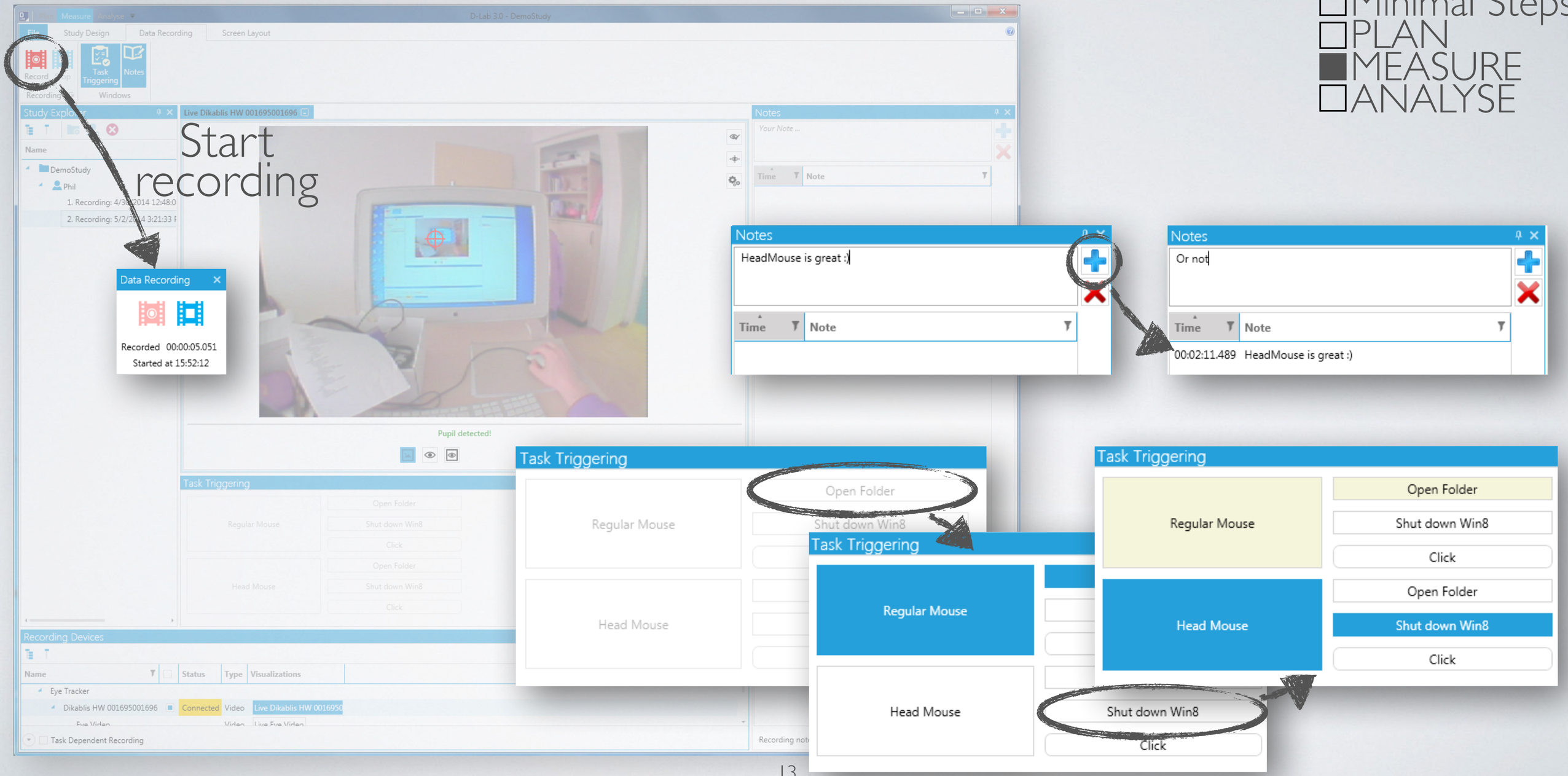

MEASURE

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Marker Origin

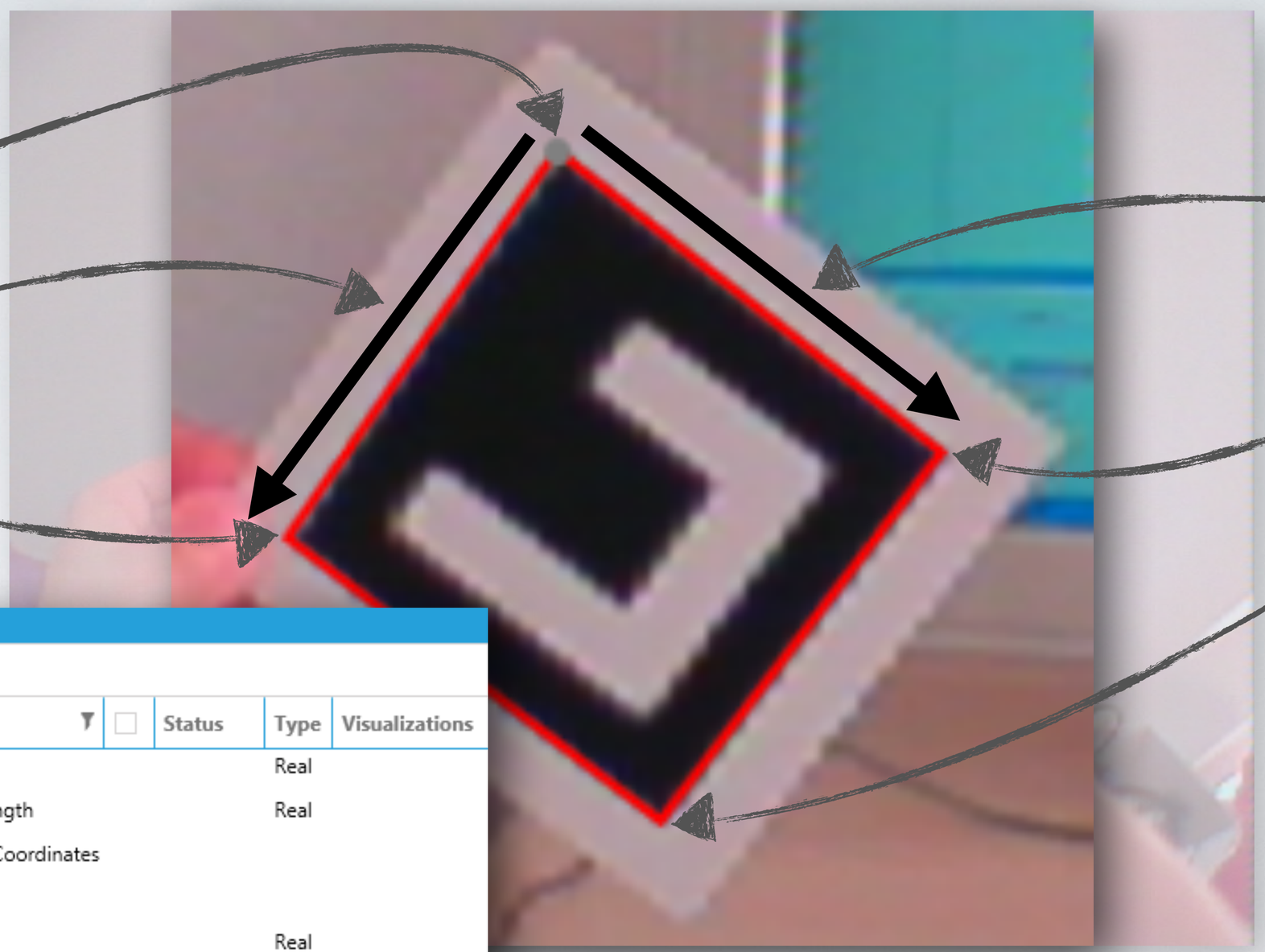
y-Axis

(0,1)

x-Axis

(1,0)

(1,1)



Recording Devices

Name	Status	Type	Visualizations
Saccades		Real	
Saccades Length		Real	
Gaze in Marker Coordinates			
Santiago			
Pupil X		Real	
Pupil Y		Real	Line Chart

MEASURE

- [ ] Hardware
- [ ] Software
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- [x] MEASURE
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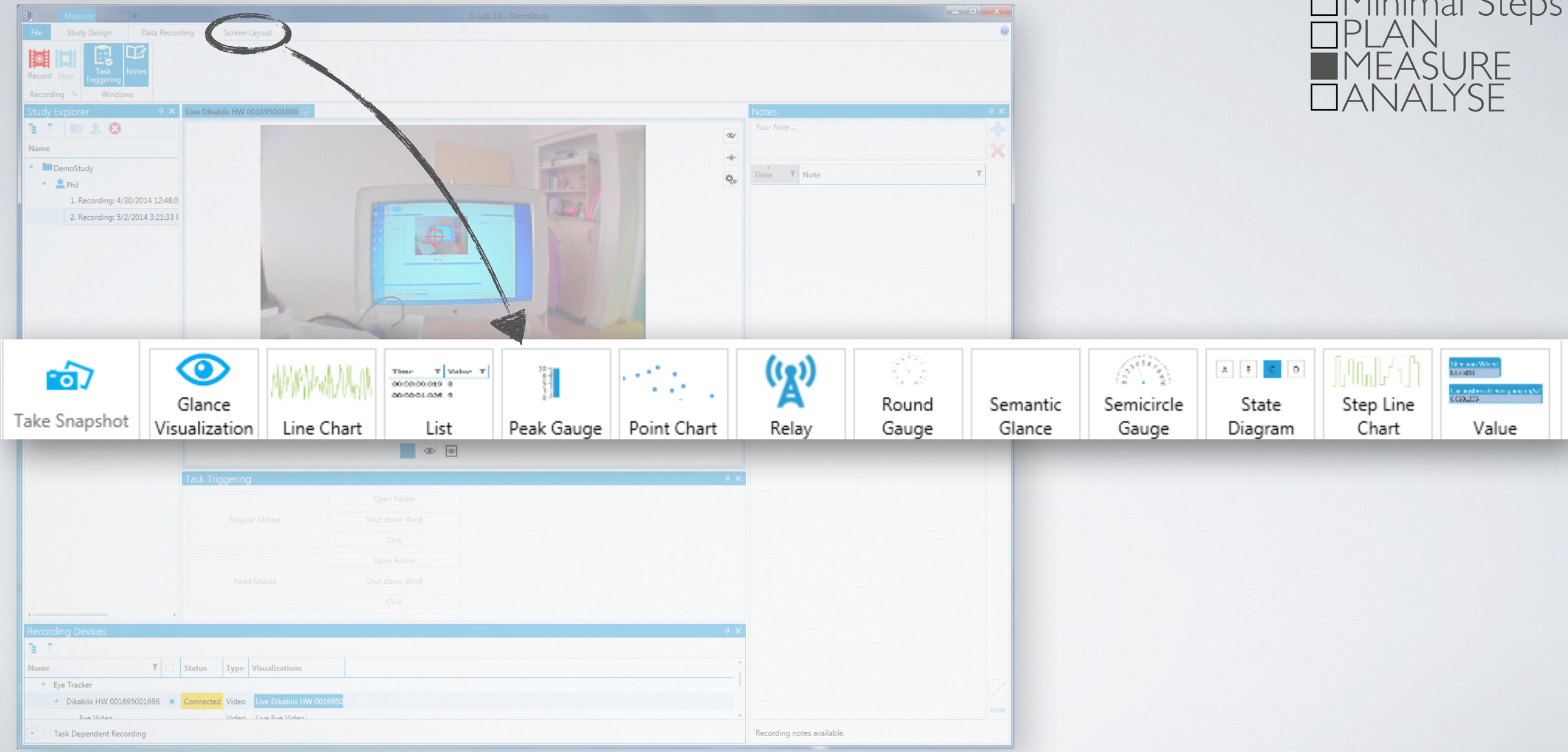

MEASURE

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- ■ MEASURE
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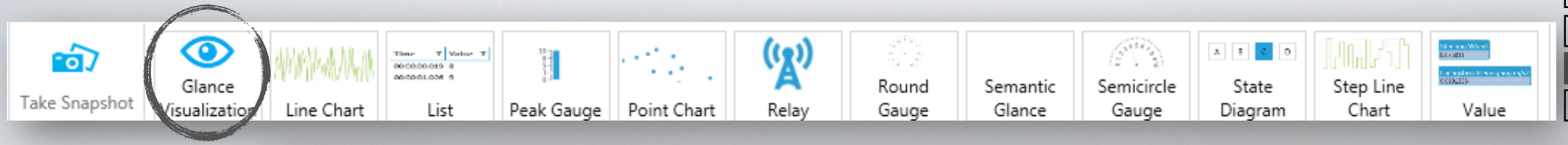

Select the markers that should be used to ‚correct' the gaze visualization

MEASURE

- [ ] Hardware
- [ ] Software
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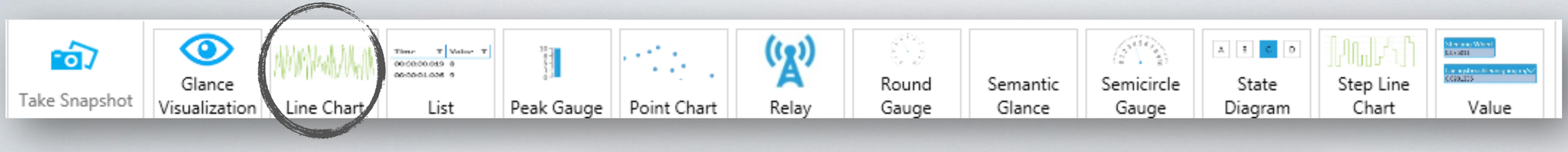
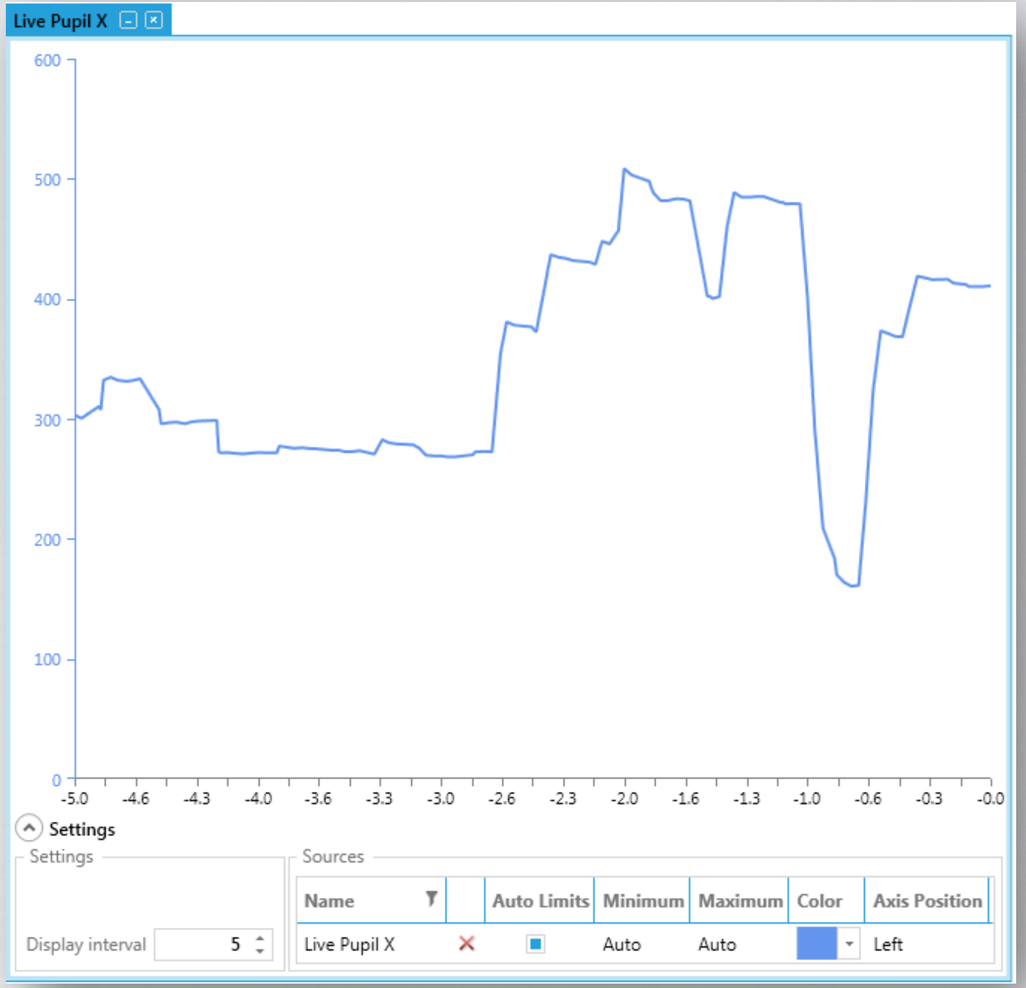
- [x] MEASURE
- [ ] ANALYSE





MEASURE

- [ ] Hardware
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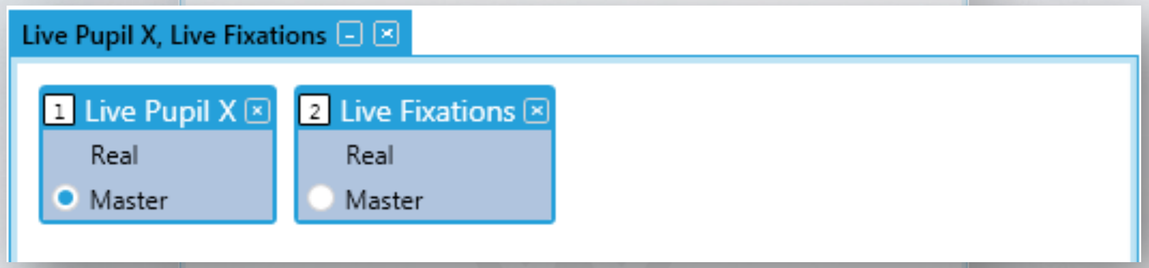
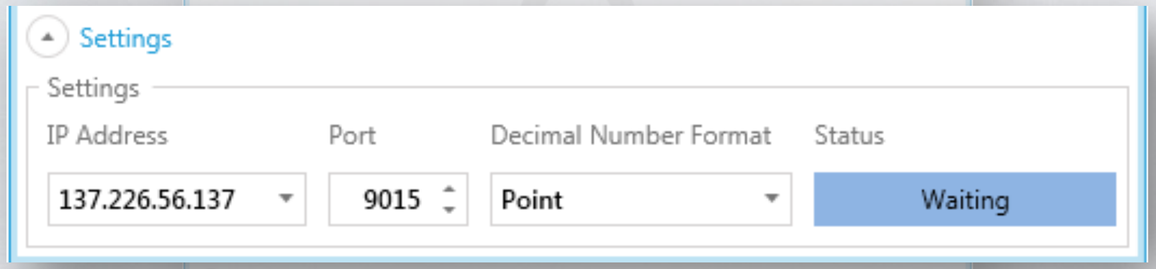
- [ ] ANALYSE






```
- (void)connect {
   [socket connectToHost:@"137.226.56.137" onPort:9015 error:nil];
}
- (void)onSocket:(AsyncSocket *)sock didReadData:(NSData *)data withTag:(long)tag {
   NSString *string = [[NSString alloc] initWithBytes:[data bytes] length:[data length]
      encoding:NSUTF8StringEncoding];
   NSLog(@"Received Data (Tag: %li): %@", tag, string);
}
```

ANALYSE

- ☐ Hardware
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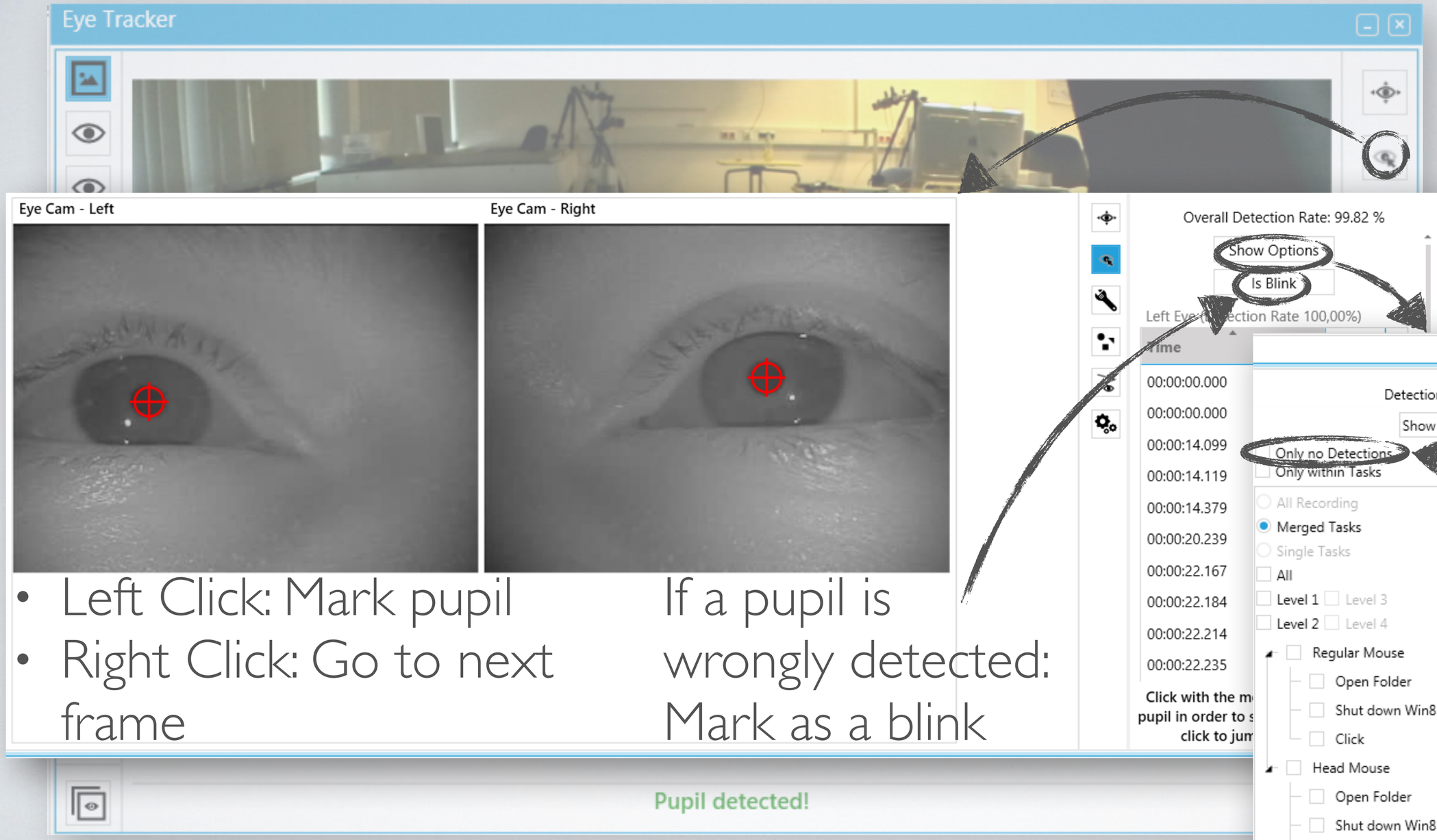

- Left Click: Mark pupil
- Right Click: Go to next frame

If a pupil is wrongly detected: Mark as a blink

Improve pupil detection manually

Omit frames where a pupil is detected

ANALYSE

- ☐ Hardware
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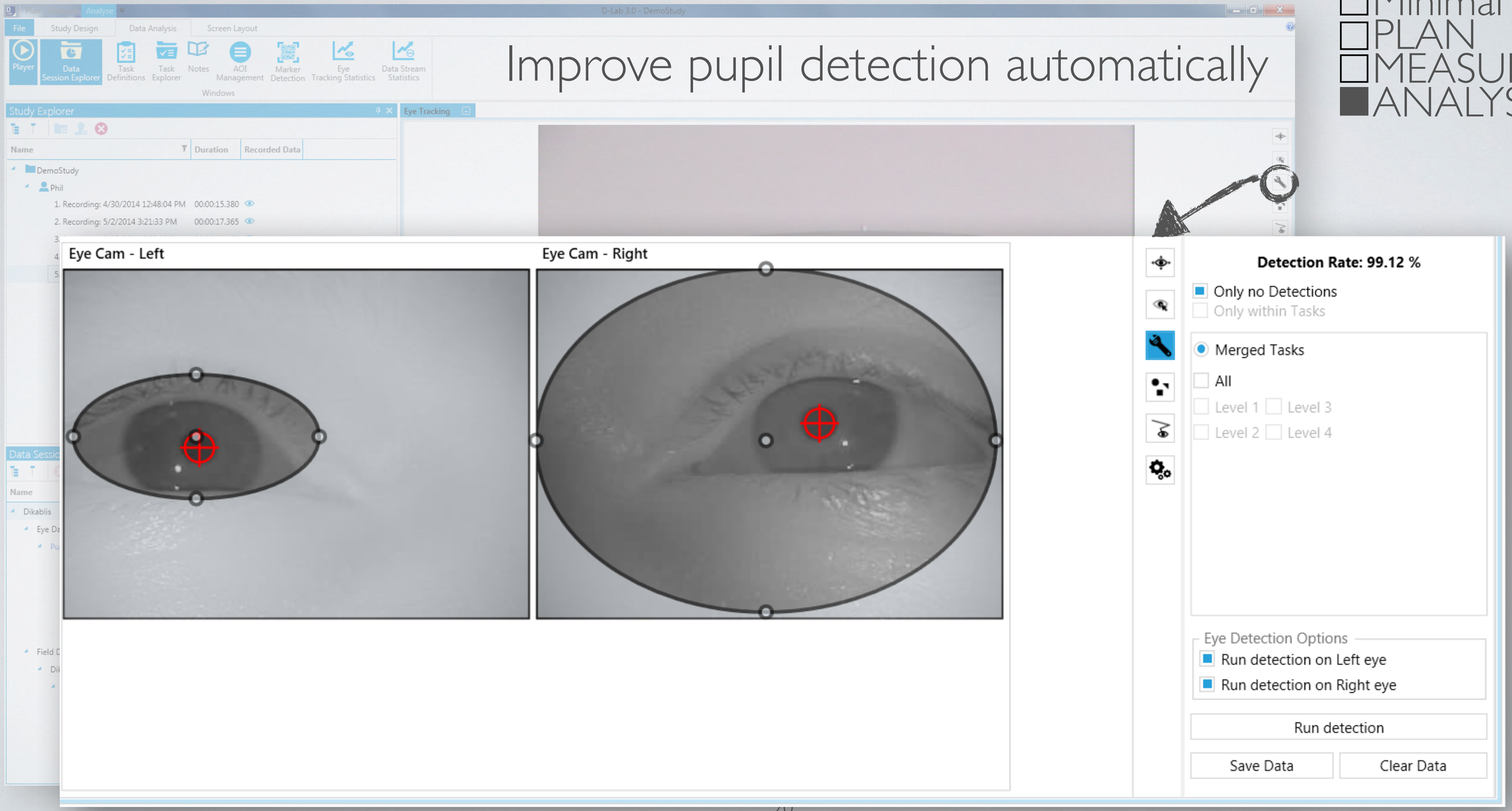
Improve pupil detection automatically



ANALYSE

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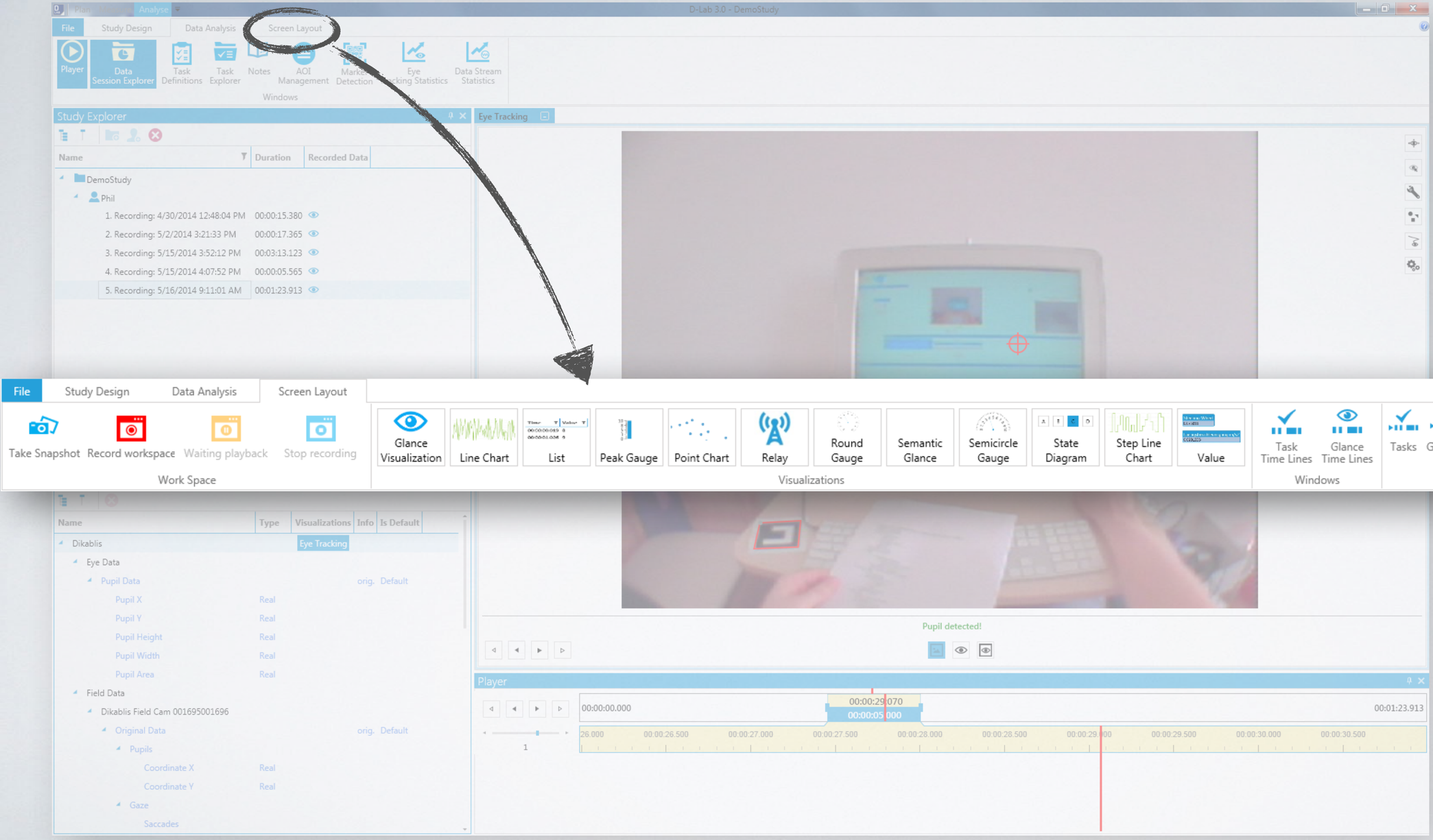

ANALYSE

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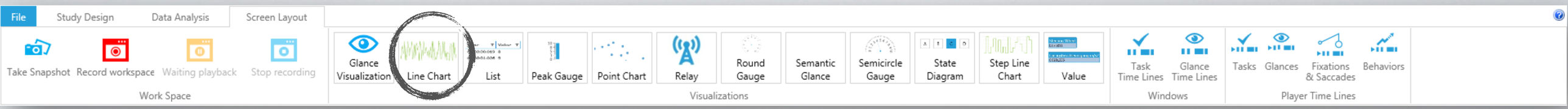

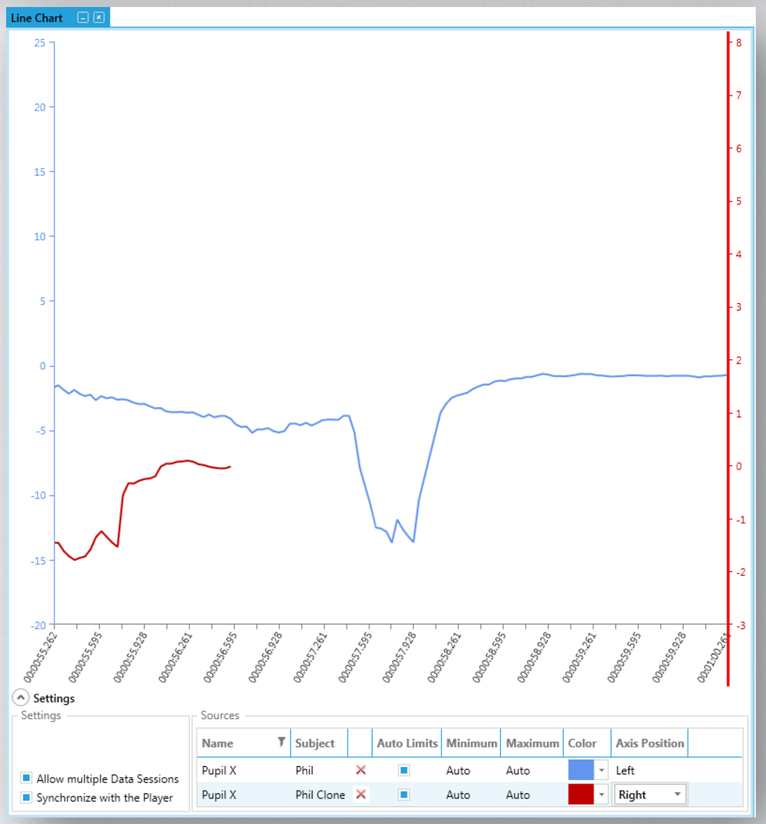

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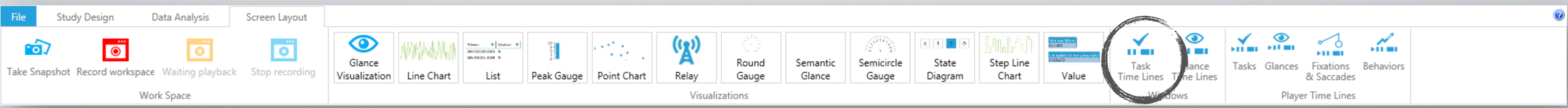

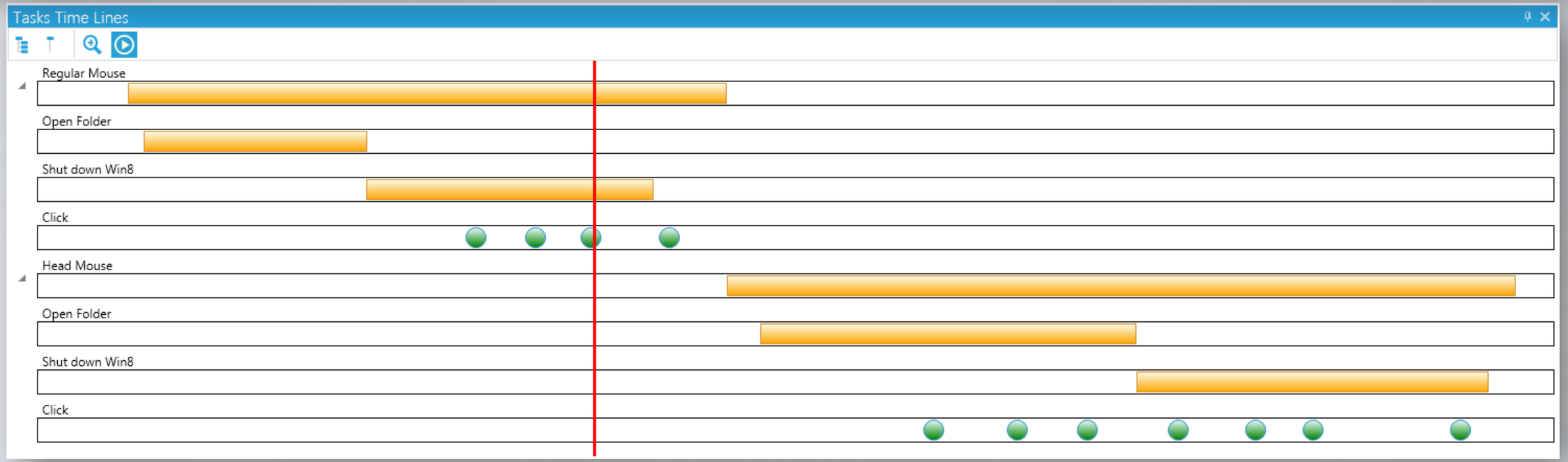

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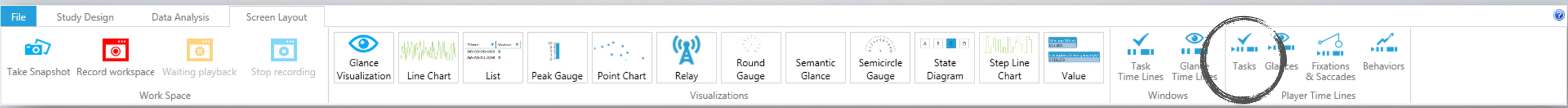

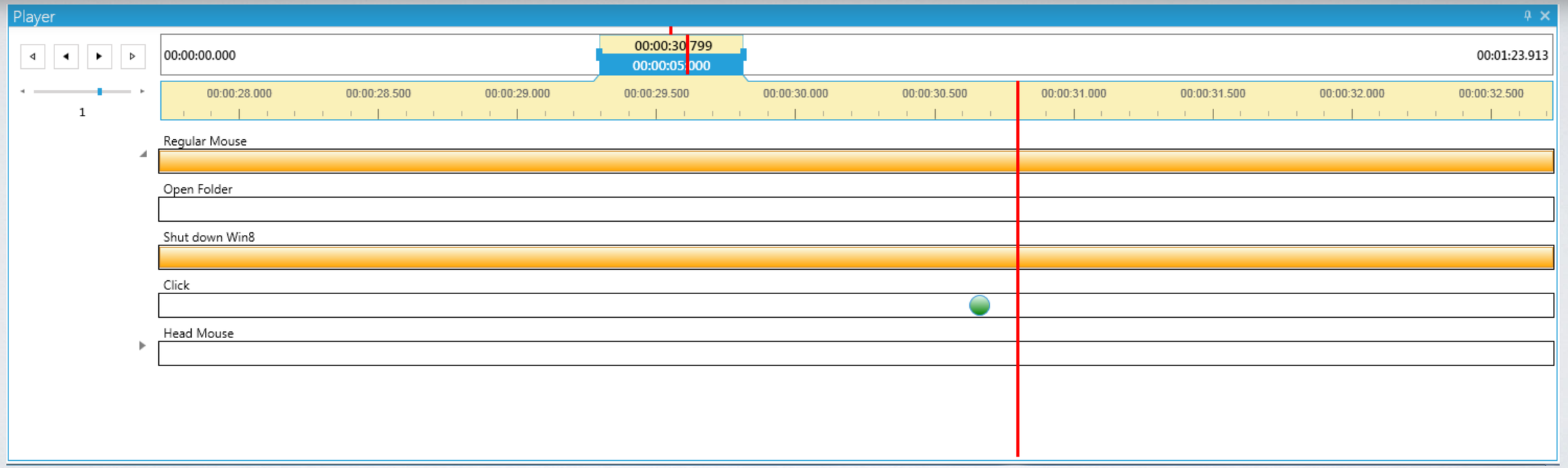

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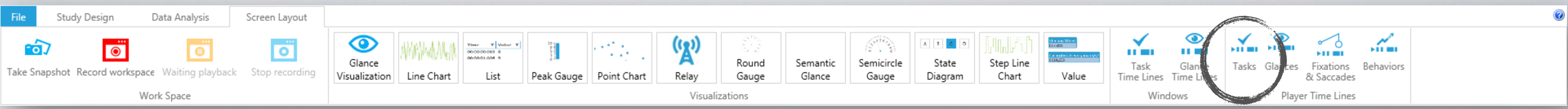

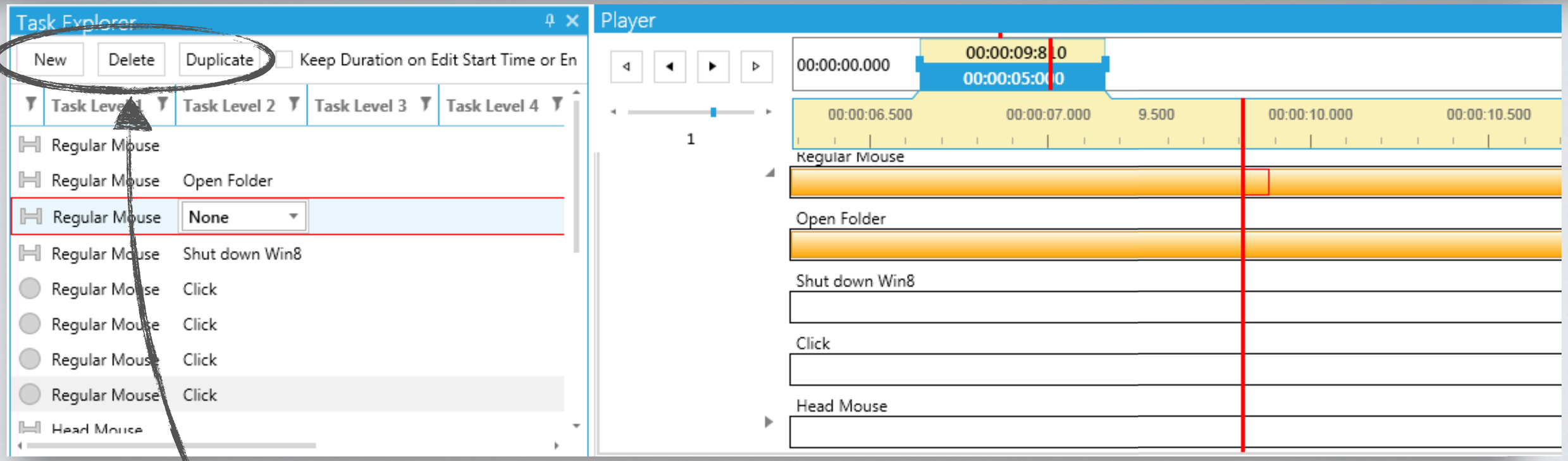

Add/Edit task markings

ANALYSE

- ☐ Hardware
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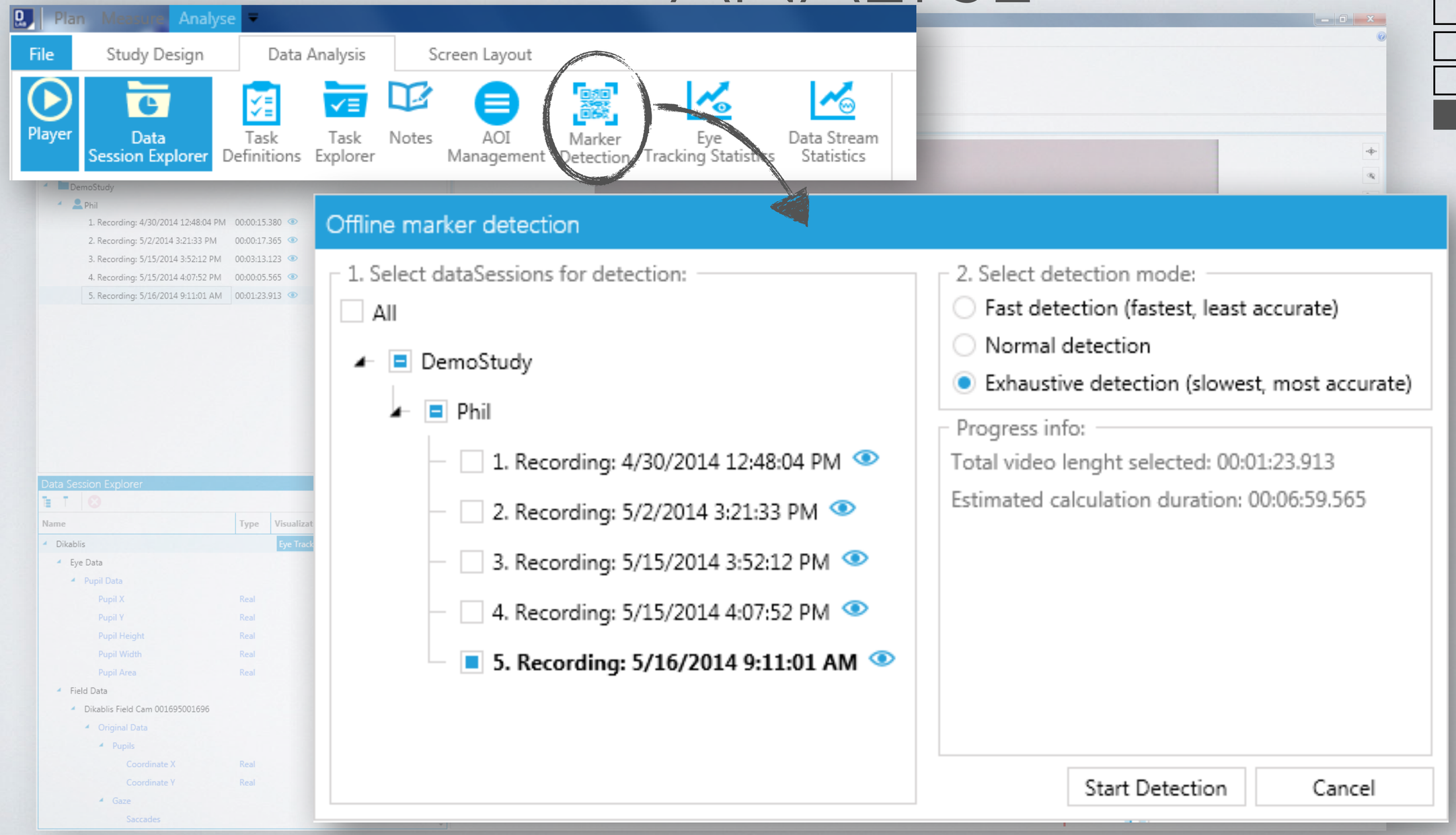

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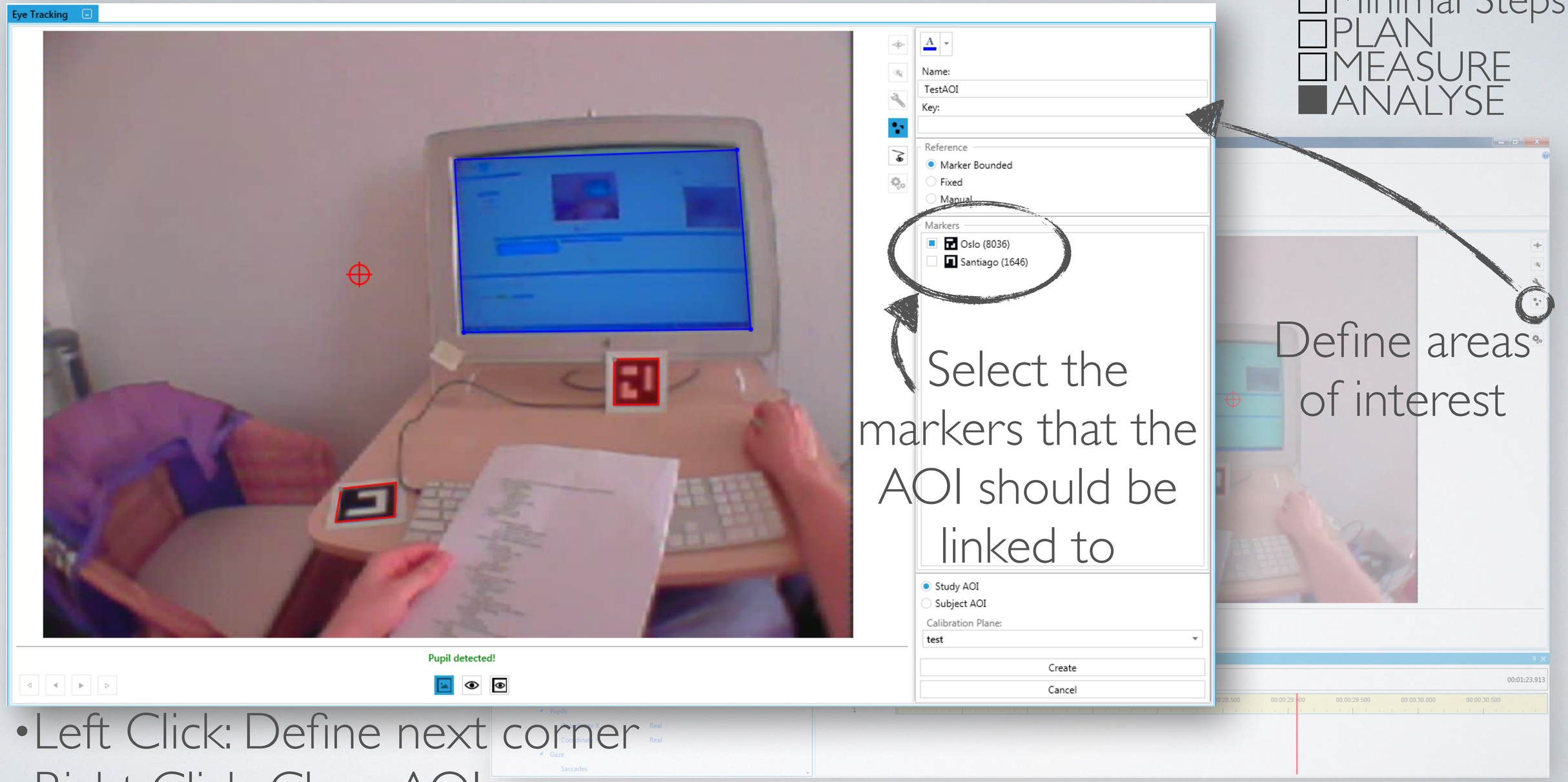

- Left Click: Define next corner
- Right Click: Close AOI

ANALYSE

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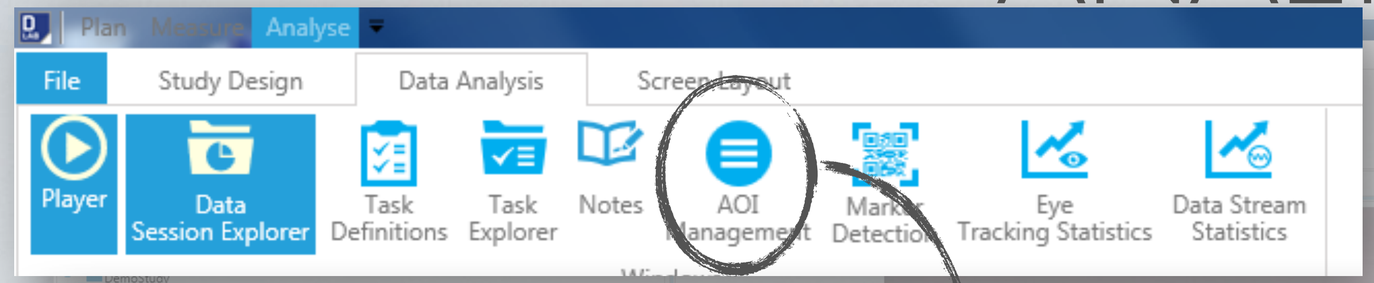

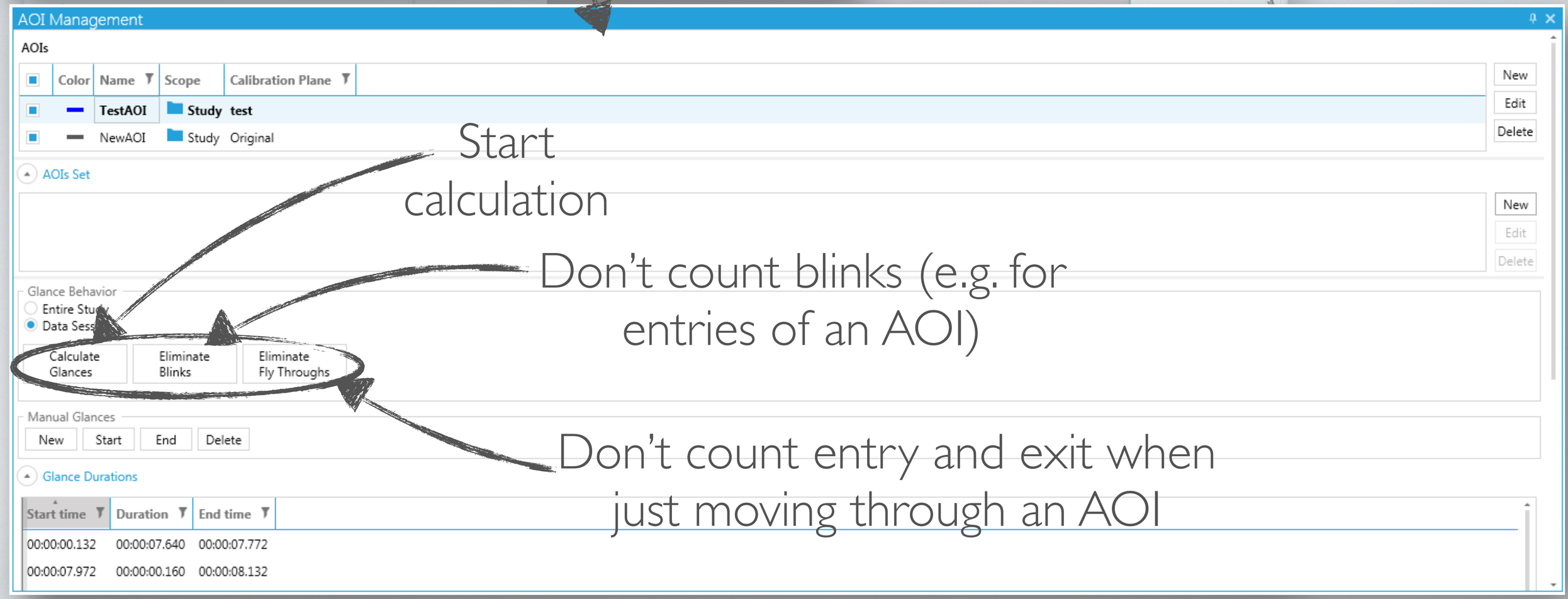

Start calculation

Don't count blinks (e.g. for entries of an AOI)

Don't count entry and exit when just moving through an AOI

ANALYSE

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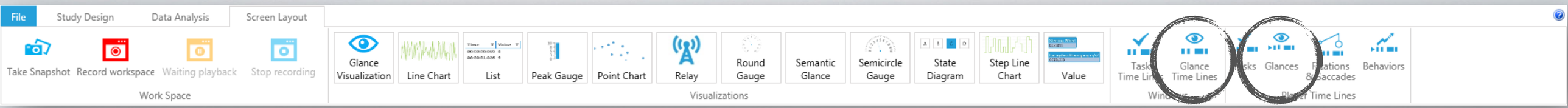
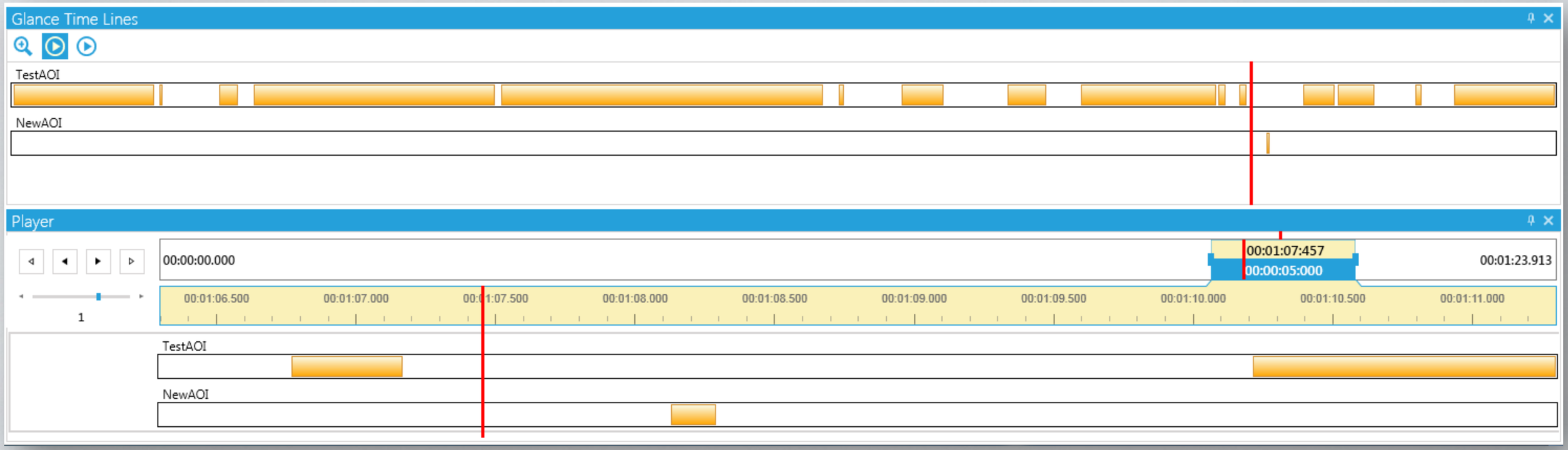
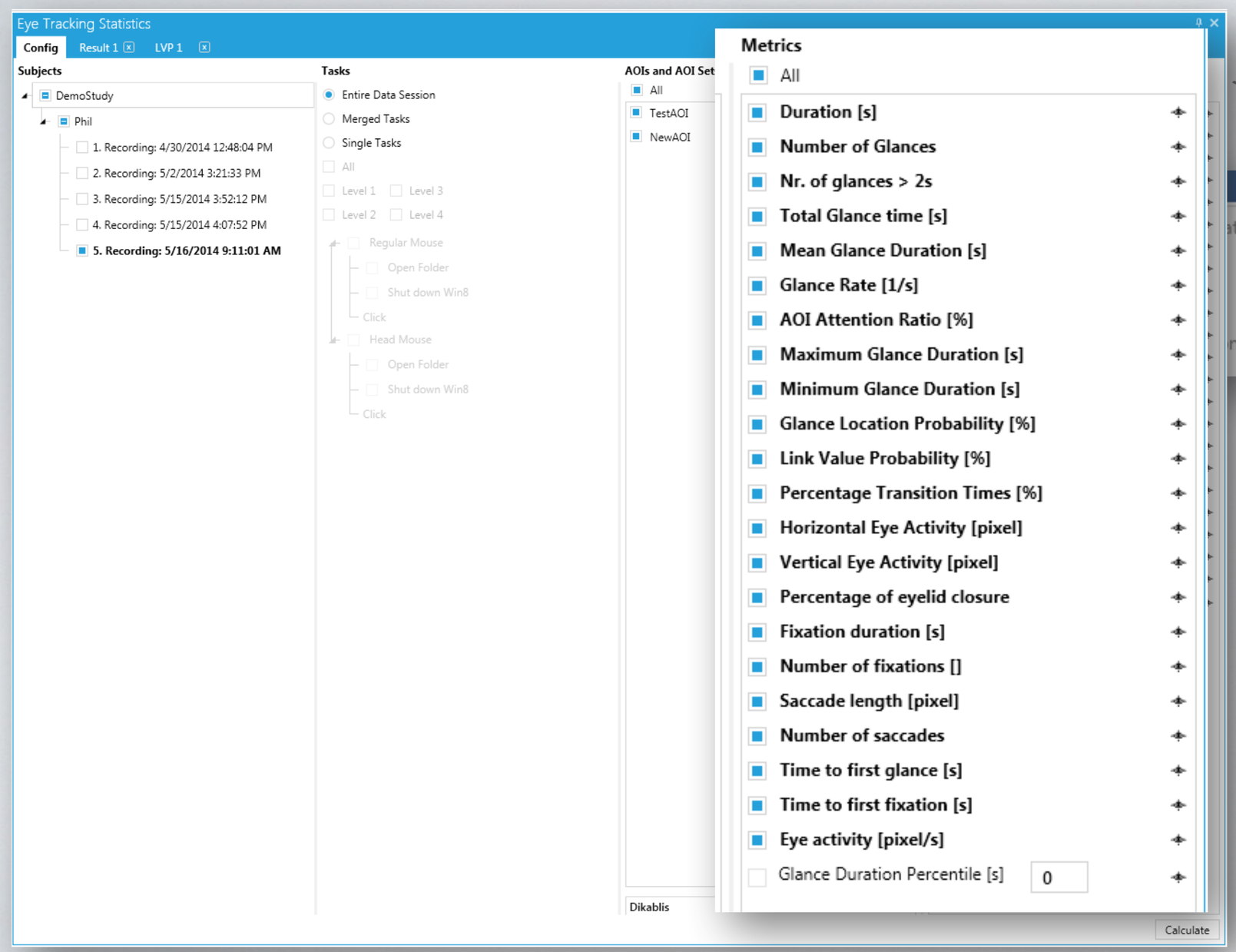
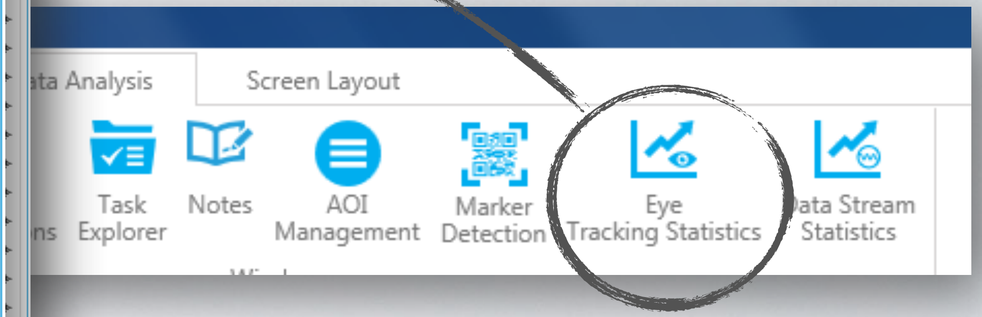




ANALYSE

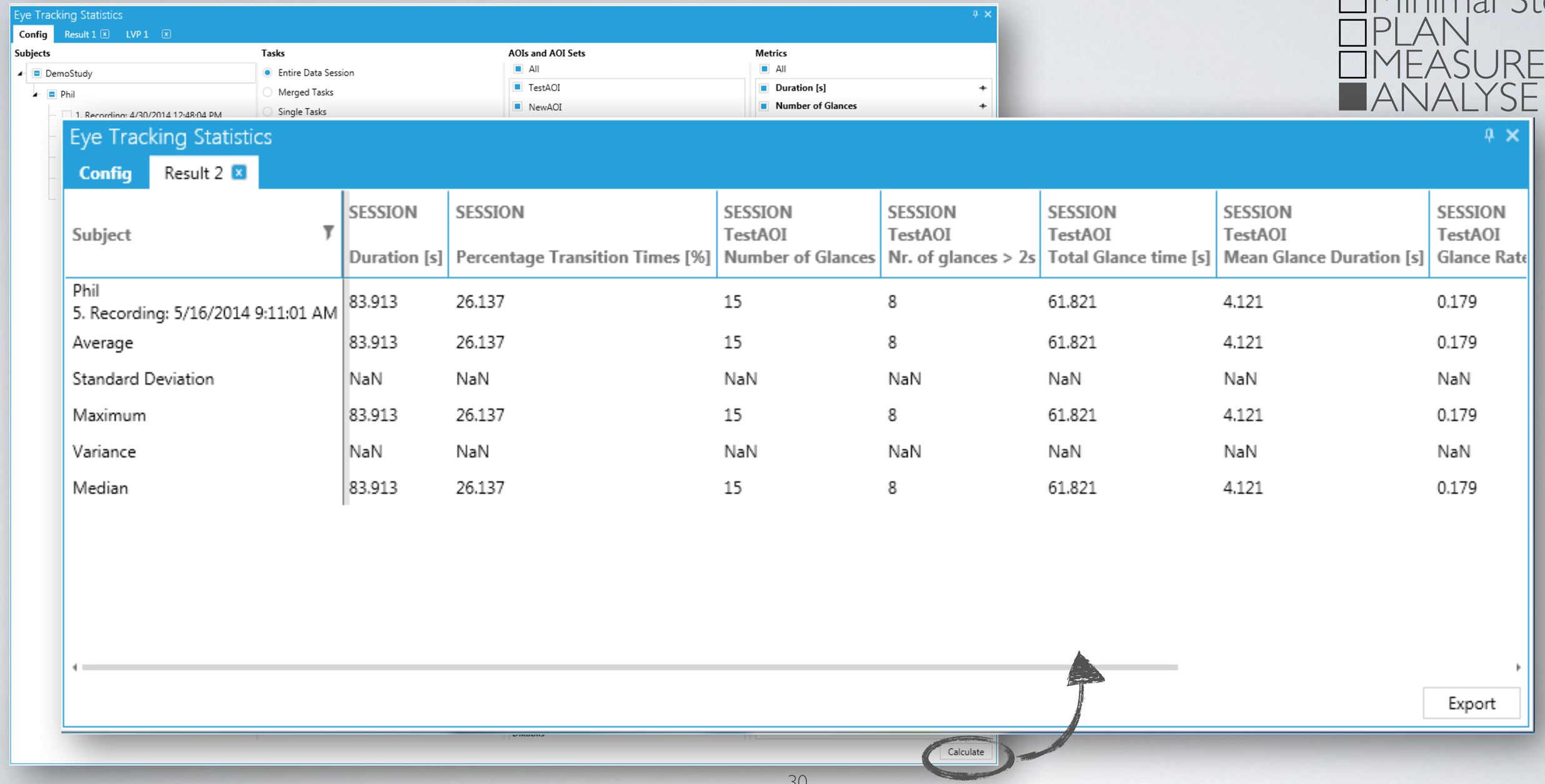
- [ ] Hardware
- [ ] Software
- [ ] Minimal Steps
- [ ] PLAN
- [ ] MEASURE
- [x] ANALYSE





ANALYSE

- ☐ Hardware
- ☐ Software
- ☐ Minimal Steps
- ☐ PLAN
- ☐ MEASURE
- ■ ANALYSE



Eye Tracking Statistics

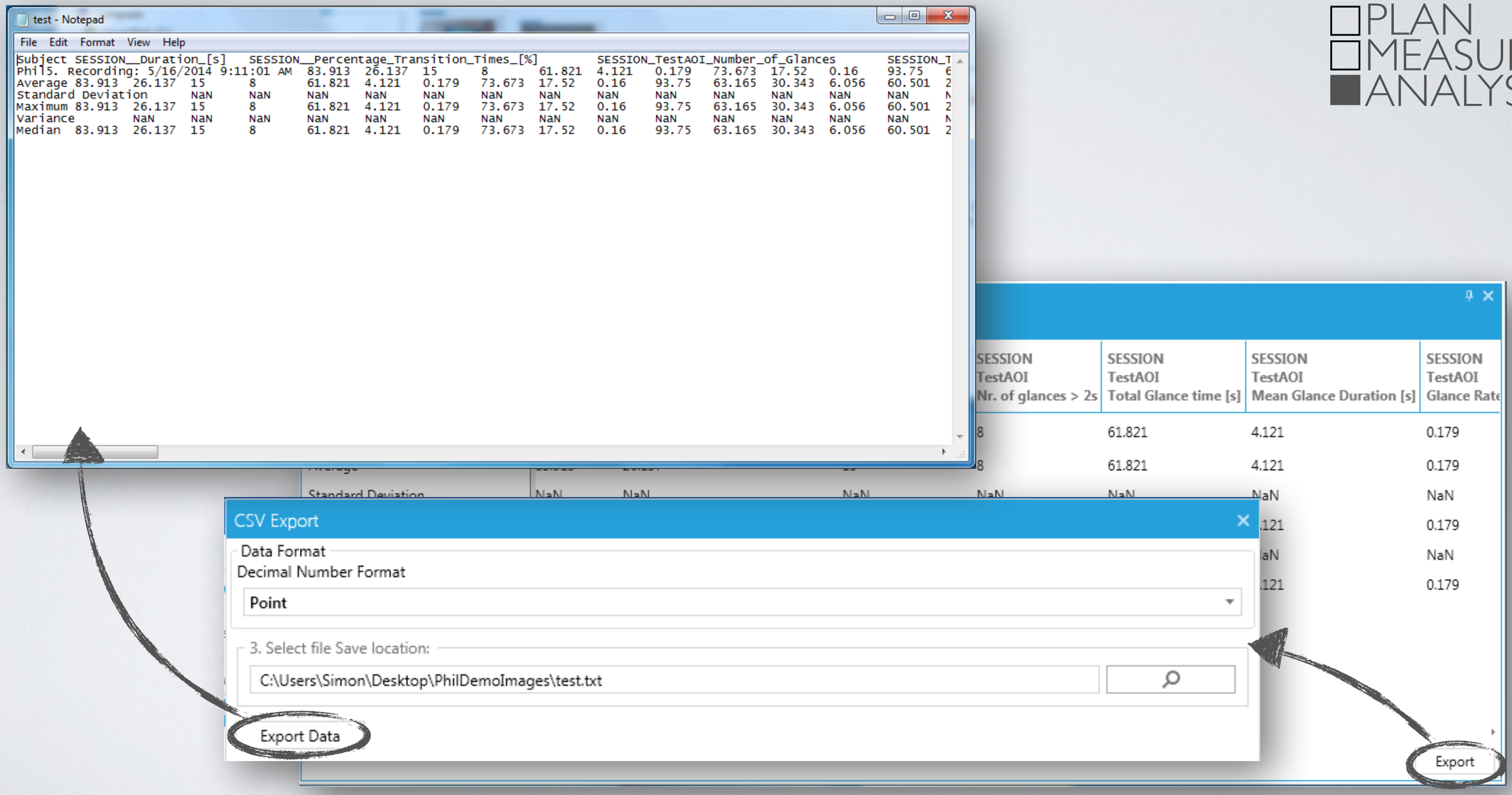
Config | Result 2

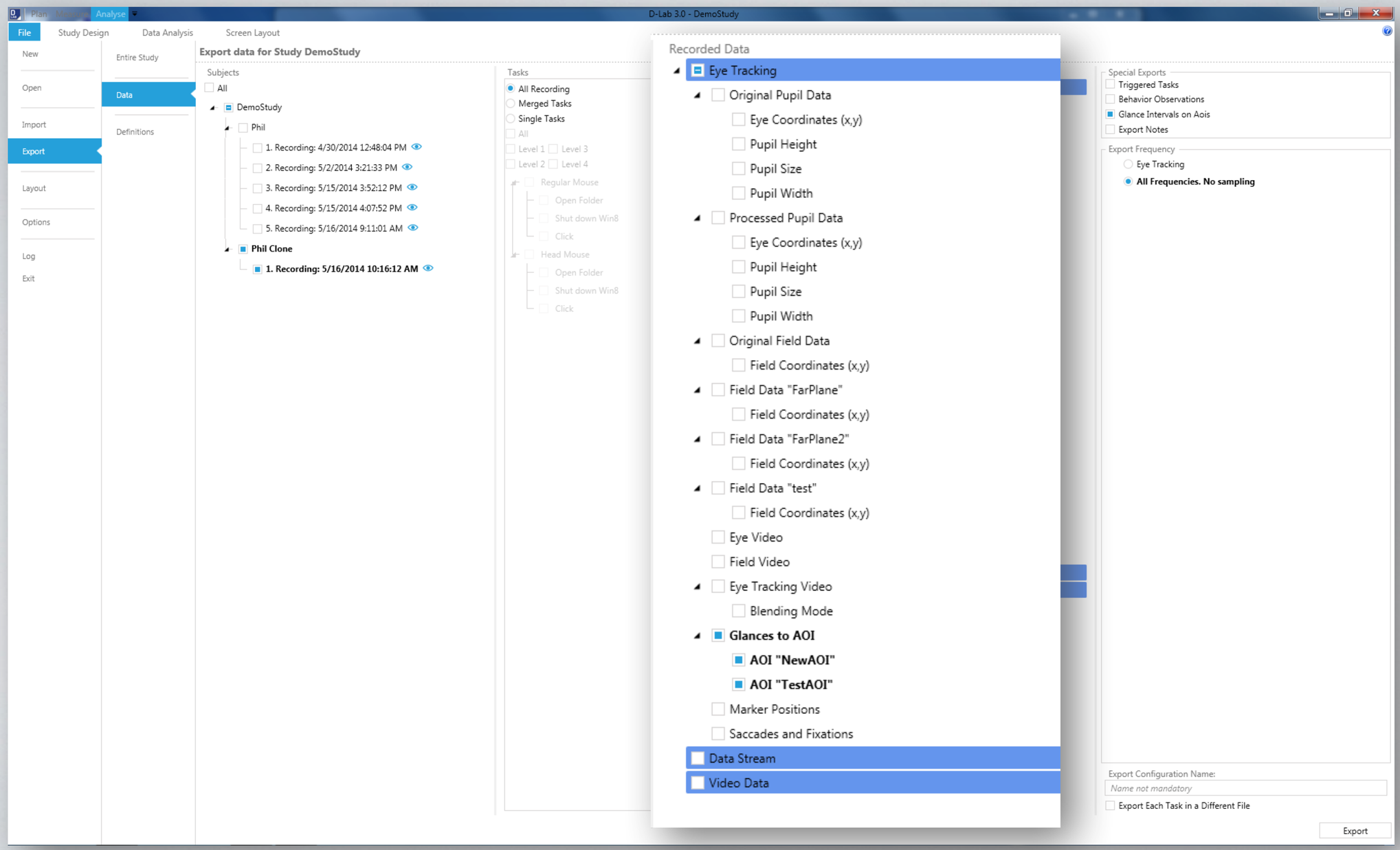
Subject	SESSION Duration [s]	SESSION Percentage Transition Times [%]	SESSION TestAOI Number of Glances	SESSION TestAOI Nr. of glances > 2s	SESSION TestAOI Total Glance time [s]	SESSION TestAOI Mean Glance Duration [s]	SESSION TestAOI Glance Rate
Phil 5. Recording: 5/16/2014 9:11:01 AM	83.913	26.137	15	8	61.821	4.121	0.179
Average	83.913	26.137	15	8	61.821	4.121	0.179
Standard Deviation	NaN	NaN	NaN	NaN	NaN	NaN	NaN
Maximum	83.913	26.137	15	8	61.821	4.121	0.179
Variance	NaN	NaN	NaN	NaN	NaN	NaN	NaN
Median	83.913	26.137	15	8	61.821	4.121	0.179

Export

ANALYSE

- ☐ Hardware
- ☐ Software
- ☐ Minimal Steps
- ☐ PLAN
- ☐ MEASURE
- ■ ANALYSE



ANALYSE

- ☐ Hardware
- ☐ Software
- ☐ Minimal Steps
- ☐ PLAN
- ☐ MEASURE
- ■ ANALYSE