When doing MEG-experiments

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Troubleshooting and some known pitfalls

Delays

- Measure the delays of all your stimuli – if possible – before your first real experiment. This way you will avoid or at least minimize the unknown effects of different delays.
- It is known that visual stimuli might cause unwanted time jitter to your trigger data if not treated and handled properly. This is due to the refresh rate of the projector.

Trigger channel 16

- When using trigger channel 16, it might cause a peculiar effect to the STI101 collection channel in DACQ. Instead of a positive trigger, it might show as a large negative trigger. This is due to how DACQ treats large binary values. This is a known bug in the data acquisition program which is being investigated by Elekta. It can be corrected during data analysis (ask for instructions of how) or cheaply by avoiding the use of this channel.

SQC## (or something similar) connection problems

Every now and then Data Acquisition program might complain about connection issues to sqc## or something similar. This implies that the Data Acquisition cannot make connection to the Squid Controller cards. Often the only way to fix this is to reset SCC card in the machine area behind the shield room. After resetting one has to run "Restart Acquisition Programs" routine which can be found in the Acquisition program folder. Also, afterwards one might have to load tunings in the Tuner.

Tuner hidden

Is the tuner hidden and DACQ complains about it when you try to start the program? Try pressing Alt+TAB to screen through the running programs. One might be the Tuner.

Camera surveillance

Screen showing the MEG participant looks funny

- If zoomed in, unplug and plug the power cable
- If the screen complains about connection issues, it might be that the power cord is not connected properly. Check that there is a green led glowing on the power cord.

Projector

The projector does want turn off? Press the “Power” –button twice.

HPI digitation

Remember to save HPI digitation in case the DACQ program freezes.

Disk space

To check how much room is left in the hard drive there is a specific program for it in the menu of the Acquisition program.

He recycling on or not

Turn on if more than 3h brake between experiments. One can also turn/flip the He dewar for recycling position during daytime breaks. For overnight it is mandatory to flip it.

He recycling can also be turned on for shorter than 3h breaks. Then the dewar is not necessary to turn to recycling position.

Can I disconnect the trigger cables inside stimulus cabin?

Only those cables coming from response pads and 4-button response device (input channels 9-14) should be always connected. All else can be disconnected if they are not part of your experiment.

How to use the internal communication system

The comm system has two different operation modes:

1. Tangent mode. In this mode you keep “T” pressed down to speak to the shield room. “T” is not pressed when you want to hear the sound from the shield room. This mode is turned on by pressing “T” for several seconds.
2. Always on mode. In this mode you can hear what the sounds from the shield room and you can speak to the communication system without pressing anything. Note that in this mode the participant can hear everything you speak in the measurement room – albeit not necessarily very well. This mode is turned on by pressing “T” for only a short while.

When starting your experiment, the communication system should be turned to channel 11 by pressing “1” twice. The comm system is turned off by pressing “X”.

Ventilation effects

It is known that shielded-room ventilation will create artifacts to the MEG data. If they are a problem, turn off the ventilation for the duration of the experiment. But do remember to turn it back on, also.