

The measurement check list is intended to help a new user to start the measurements at AMI Centre.

Safety course

A new user has to pass AMI Centre's safety course, which includes a video lecture, hands-on demonstration at the scanner, and examination. The safety course is organized several times per year. The safety course and rigorous MR safety procedures has kept us free from any MRI-related medical emergencies since the inauguration of AMI Centre (2002).

Read AMI Centre's Safety and Operations instructions

A new user has an obligation to become acquainted with [AMI Centre's Safety and Operations instructions](#).

Research permission (<https://www.aalto.fi/services/advanced-magnetic-imaging-centre>)

Obtain a supporting statement from appropriate ethics committee (e.g. Aalto, HUS, UH, etc.)

- Aalto, <https://inside.aalto.fi/display/AboutAalto/Research+Ethics+Committee> (requires Aalto account)
- HUS, <http://www.hus.fi/tutkijalle/eettiset-toimikunnat/Sivut/default.aspx>
- UH, <https://www.helsinki.fi/en/research/research-environment/research-ethics>

Secure funding

List the persons who can reserve scanner

- They must have passed safety course
- They must be listed in the research permission as well

Name	Email	Phone	Affiliation

MRI protocol

Select MRI coil (<https://www.aalto.fi/en/aalto-neuroimaging-infrastructure-ani/ami-centre-facilities-mri-system>)

- 32-channel, best general-purpose research coil
- 30-channel, recommended for eye tracking, very wide binocular field of view
- 20-channel, for simultaneous EEG measurements, slightly larger inner dimensions (note head size)

Select fMRI sequence

- EPI, MPRAGE, DTI, etc.
- Note limitations in sequences applicable with EEG and Sensimetrics headphones

fMRI / DTI / MPRAGE etc. parameters

Coil				
Sequence				
Orientation				
TR				
TE				
Slices				
Slice thickness				
Dist. Factor (Gap)				
Phase enc. dir.				
FOV read				
FOV phase				
Averages				
Flip angle				
Fat. Suppr.				
Base resolution				
Phase resolution				
Time points				
PAT (Grappa)				
SMS acc.				
Other parameters				

Stimulus equipment

Software (version, etc.)

Presentation
E-Prime
Matlab
PsychoPy
Psychtoolbox

Software	Version

Stimuli

Are the default settings fine for your experiment? If you have particular requirements for the stimuli, please contact Tuomas Tolvanen (tuomas.j.tolvanen@aalto.fi).

Visual stimuli

Default and recommended settings for visual stimuli

- Resolution 1920x1080
- Frequency 120 Hz
- Screen dimensions 33.5 cm x 21.0 cm
- Viewing distance 35–39 cm

Resolution	Frequency	Screen dimensions	Viewing distance

NOTE! Large stimulus size -> head movement possible

Auditory stimuli

- Measure dB levels before measurements
- Check default sound volume for your stimuli

- Sensimetrics (headphones are not applicable with all sequences, e.g. DTI)
- ADU headphones

Response equipment (<https://www.aalto.fi/services/ami-centre-facilities-response-devices>)

Response devices

Lumitouch – left and/or right hand buttons

fORP – left and/or right hand buttons, joystick, trackball, grip force

Optical microphone

Device	Handheld

Monitoring systems

<input type="checkbox"/> EEG	<input type="checkbox"/> Pulse	<input type="checkbox"/> Face camera (movement/gesture)
<input type="checkbox"/> ECG	<input type="checkbox"/> Respiratory bellows	<input type="checkbox"/> Accelerometers
<input type="checkbox"/> GSR	<input type="checkbox"/> Eye tracking	

Piloting

- With a phantom or a human subject
- Free with phantom, contact Toni Auranen (toni.auranen@aalto.fi)
- Human piloting is subject to a charge
- Check timing with stimuli etc.
- Prepare your MRI imaging protocol
- Develop your own measurement procedure!

Other

- Get Aalto key card from NBE HR Coordinator
- External users please ask instructions from Marita Kattelus (marita.kattelus@aalto.fi) at AMI centre)
- Get access to MRI from Toni Auranen (toni.auranen@aalto.fi) at AMI Centre

Data transfer

- Ask for a AMI user id from Petteri Räisänen (petteri.raisanen@aalto.fi) at the Department of Neuroscience and Biomedical Engineering, Aalto University School of Science
- Ask detailed instructions from Tuomas Tolvanen (tuomas.j.tolvanen@aalto.fi) at AMI Centre.

NOTE! Please note, that you have to move your data to your own data servers/backups within **2 weeks** from your respective measurement time. After the 2-week grace period, the data can be removed from AMIserver without notice due to disk space limitations!

Else

- EEG settings
- BIOPAC settings
- Presentation settings
- Data folder on amiserver
- Eyelink settings
- Stimulus folder
- E-Prime settings
- •
- dB levels
- Face camera settings
- PsychoPy settings
- •
- fORP settings
- Optical microphone settings
- Psychtoolbox settings
- •