
EGI Support Report



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[New Knowledge Center Article — “Dense array EEG and the importance of the average reference”](#)

Measuring EEG is a way to record the change over time in the electrical potential at the scalp, which can be used as a way to assess the underlying brain activity that gives rise to the potentials measured at the scalp. To record change, there must be a recording electrode with a stable (inactive) potential which you can reference in order to measure how much change occurred at any of the other given electrodes across the scalp. This is the EEG Reference. Read [our in-depth article](#) on the importance of using an average reference in the EGI Knowledge Center.

[New Knowledge Center Article — “Spline interpolation of the scalp EEG”](#)

Modern dense array EEG systems make use of up to 256 electrodes arrayed across the scalp where, during data collection, the 256 amplifier channels record 256 voltages relative to a single common reference electrode. To render the measured potentials graphically, a method for estimating scalp potentials in between electrode locations is needed. As described in EGI's Technical Note [“Spline Interpolation of the Scalp EEG.”](#) the method was first developed in the context of geophysics and was later imported to EEG.

This described methodology is practically implemented in the graphical rendering of Net Station's Two-Dimensional Topographic Maps, the Current Density feature in Net Station Review and the Net Station Bad Channel Replacement Tool.

[BESA Updates](#)

BESA, by MEGIS Software GmbH, is a versatile Windows-based software for source analysis and dipole localization in EEG and MEG research. BESA provides a variety of source analysis algorithms, and allows fast hypotheses testing and MRI/fMRI integration with BrainVoyager software. With the Source Coherence Module, you can create event-related time-frequency displays of power, amplitude, or event-related (de)synchronization and coherence using brain sources or surface channels.

The current versions are:

- BESA 6.1 Research Basic (Module 1), a.k.a. BESA Review
- BESA 6.1 Research Source Analysis (Module 2)*
- BESA 6.1 Research Coherence Analysis (Module 3)*
- BESA 6.1 Research Complete Package (includes Modules 1, 2, and 3)
- BESA 6.1 Research MEG Analysis (Module 4)*

- BESA Statistics 2.0 BESA MRI 2.0

*requires BESA 6.1 Research Basic (Module 1)

The update release BESA Research 6.1 January 2017 is now available for download from the [BESA website](#). Anyone using BESA Research 6.1 is eligible for a free upgrade to this version.

BESA Research is now available for limited diagnostic purposes in the EU and in other countries that recognize the CE certification for medical devices, including the use as an additional tool for the evaluation of epileptiform EEG and MEG data. Diagnostic use is restricted to applications detailed in the Intended Use document, and to a group of users detailed in the Intended User document, which need to be consulted together with the other safety instructions before any such use. Several enhancements were performed to minimize potential risks and to improve the workflow of clinical application. Apart from that, other improvements were made, especially for an improved EDF format reading and writing feature, and better handling of batch logging.

Updated Size Chart with new small preterm infant Net

We are pleased to introduce our smallest Net, designed for preterm infants with head circumferences of 28-30 cm. These tiny Nets were developed specifically for the head shape and sensitive skin of preterm infants with special features for faster, easier, lower stress application. Available in 32, 64, and 128 channel counts.

Refer to the newly updated [HydroCel GSN Size Chart](#), found in [EGI's online Knowledge Center](#) to see all sizes available.

Updated HydroCel GSN MR Instructions

The revised "[MR Nets Use Instructions](#)" are now in EGI's online Knowledge Center under Manuals > Geodesic Sensor Nets > HydroCel Geodesic Sensor Nets. (This revision replaces the previously separate application (8402100-51) and cleaning placards (8402101-51)).

This handy overview will help those of you performing simultaneous EEG/fMRI acquisition, by providing:

- Advice on actions to be taken should you be using an unsealed coil within your MR scanner
- Reminders on what components are MR conditional and therefore safe to use within the MR environment
- Updated advice on ECG electrode placement
- Updated software steps to NS 5
- Additional best practices, including:
 - applying the ECG electrodes before the Net
 - having the patient wear ear plugs
 - using sand bags to minimise wire movement
 - minimizing wire loops

New Net Disinfectant Guide

A number of you have encountered difficulties in purchasing our recommend disinfectant, Control III. As a result, we have fully tested and recommend another disinfectant for use with your Geodesic Sensor Nets. Our updated [Net Disinfectant Guide](#) provides you with use instructions for both Control III and Trionic D. Which disinfectant you use depends largely on which is available in your country. You can find the new guide in EGI's online Knowledge Center under Manuals > Geodesic Sensor Nets > Caring for your Nets. If you need advice on how to purchase either disinfectant, please [contact the EGI Support Team](#).

New Knowledge Center articles

- [Dense array EEG and the importance of the average reference](#)
- [Spline interpolation of the scalp EEG](#)
- [Clinical Case Study: CEO Don Tucker discusses a clinical case study using GeoSource 3.0 Research](#)

Current versions of software and firmware from EGI

- Mac OS X 10.11.5: Net Station 5.3.0.1 and GPS 3.0 Solver
- Mac OS X 10.10.5: GPS 3.0 Acquisition
- Net Amps 300 Firmware 0/11
- Net Amps 400 Firmware 1.6.17
- Windows 7: E-Prime 2.0.10.356, EENS 2.0.2.26

How to contact our Sales Team

Wish to upgrade or add new products? [Contact EGI Order Desk.](#)



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