

Product Development

Changes to Analyzer 2.0.1: Bugfixes and new Features

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Version 2 of BrainVision Analyzer, a product long-awaited by many, was released in June 2008. All the core elements of the program have been completely revised and prepared for the demands of the coming years on the basis of the Microsoft .NET framework. Despite the conduct of an intensive beta phase which lasted practically six months, the release still contained a number of minor bugs and inconsistencies some of which have been overcome over the last year by means of updates to individual modules or, at the very least, through robust workarounds. With Release 2.0.1, all those program components that initially benefited only from provisional fixes are now to be fully renewed and replaced. Of particular importance is the remedying of a bug which has been observed on Asian operating systems and relates to the scaling of the character sets which these employ. As a result, Release 2.0.1 provided the opportunity not only to undertake further bugfixes but also to make a series of minor and major improvements to the main program and the individual modules.

For example, the handling of the marker data in the EditMarker module has been improved and it is now faster and simpler to edit and generate markers. The interface for the restoration of deleted nodes is now clearer and allows users to retrieve both individual nodes and entire subtrees.

The Wavelet View now possesses an overlay capability. These overlays are displayed in the satellite diagrams and consequently permit a better comparison of time-frequency data. Overlays can also be temporarily activated or deactivated by clicking the label in order to provide a more extensive overview during the visual inspection of the data.

It is also now possible to use the cursor keys to move the selected area associated with the transient views beyond the edge of the currently displayed section of the EEG.

One recurrent problem associated with both Analyzer 1 and Release 2 took the form of the registered components which also include VisionToolbox. Various procedures performed at operating system level may cause the loss of these registrations, thus making it necessary to re-enter them using the RegisterComponents tool.

Version 2.0.1 of the Analyzer now possesses an extensive recognition and repair function which is able to eliminate the majority of such problems before they result in malfunctions during operation.

However, this release contains not only bugfixes and enhancements. It also offers a number of useful new functions.

The Marker Export function now also allows users to save data in XML format. In recent years, this format has established itself as a universal data exchange format and is therefore now more extensively supported by the Analyzer.

The corresponding Marker Import module is also new. This makes it possible to read markers from files into the current node. Furthermore, it can also read markers from another history node and insert these in the current record. This function is also template-compatible. By way of example, let us consider the following case: After a Fourier transform, data processing in the frequency domain, and a subsequent reverse transform, the original time-domain markers are lost since these markers have no significance for the frequency domain. The Marker Import module now makes it possible to take over the markers from the last higher-level time domain node. As a result, there are no longer any limitations to the further processing of the data in the time domain and therefore to the implementation of user-defined frequency filters.

The possibility of performing inverse ICAs represents a further improvement. A solution to this requirement already existed and was in intensive use. However, with the present extension to the ICA module, it is now possible to perform reverse transforms to ICA components interactively. As a result, it is now easy to apply any subsequent sequence of processing steps to various combinations of ICA components, thus permitting even more versatile use of the ICA.

In the light of the bugfixes as well as the new possibilities that are available, Brain Products recommends that users upgrade to the new version as soon as possible. Like all updates to our software, it is, of course, free-of-charge to our customers and available in the download area of our website www.brainproducts.com ●



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BrainVision Recorder: New RDA Clients for Matlab, Python, and C++ : While it is being displayed, the EEG data can also be transferred to other programs (e.g. BCI, bio-feedback or other online analysis software) on the local PC or to other networked PCs via TCP/IP. This process is referred to as remote data access (RDA) during which BrainVision Recorder acts as server and the program receiving the data acts as client.

Because of the increase in interest in these fields of application, we have made example solutions for some of the most popular clients – Matlab, Python, and naturally C++ – available at www.brainproducts.com/downloads.php