QUADSERVER™

Real Time Data Fusion

Quad Server™ by EyeTracking, Inc. is an advanced application that allows rapid integration and synchronization of data from multiple sources on a computer network. Originally built to fulfill a requirement for the US Government's Defense Advanced Research Projects Agency (DARPA), this revolutionary data fusion tool greatly simplifies the integration process by allowing networked clients to Synchronize, Store, Visualize and Distribute data of virtually any format.

Quad Server™ performs four primary functions:

SYNCHRONIZE

Data from multiple sources are received and stored by the server. Each piece of received data is marked with a precise timestamp that is used to synchronize it with all other data streams. In this way, even the most disparate data rates and formats can be reliably correlated.

STORE

Synchronized data are written to the Quad Server™ internal database, where they can be accessed after data collection is complete. The stored data can be replayed and exported to CSV file format (compatible with statistical software such as SPSS, MATLAB, and Excel) for subsequent analysis.

VISUALIZE

Quad Server™ is capable of generating real-time visualizations. As data are received, they can be routed to associated gauges and rendered in real-time. Quad Server™ comes with a selection of stock gauges; however, users are free to create their own.

DISTRIBUTE

Quad Server™ supports distribution of synchronized data to multiple remote clients in real-time. Network clients can identify data streams of interest and subscribe to receive them as they become available. Security features in the simple-to-use protocol allow clients to control distribution of their own data. The distribution feature enables data to be integrated into real-time applications such as Adaptive Automation, Augmented Cognition, Closed-Loop systems, and more.

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BENEFITS & APPLICATIONS

- Reduce time and effort for developing integration architecture and code for different projects, experiments and prototypes.
- Integrate and synchronize data from multiple physiological sensors (such as EEG, fNIR, EKG, ECG, eyetracking and others).
- Integrate and synchronize physiological data from multiple people simultaneously (such as in team environments).
- Integrate and synchronize data from experimental tasks and simulators (i.e. the onset of stimuli presentation, current vehicle speed and altitude, button press events etc.).
- EyeTracking EyeWorks™ comes with native integration for Quad Server™ (supports eye position data, pupil size data and Workload data*).

Integrated data visualization of simulation task and corresponding physiological data shown above.

* Optional Workload Module required

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