

Qualisys<sup>®</sup>



## Electrical Network Control System

## Introduction

The PowerQuest system is a software package used to control and supervise electricity net parameters such as potential difference, current intensity, THD, etc. Not only does a real-time application enable the user to control these parameters from each and every point of the industrial site, but it also produces graphs, statistic analyses and printable reports.

## Architecture

PowerQuest was created to enable data registration from an electrical network analyzer (voltage, current intensity, THD, etc) in order to process and store it. PowerQuest has three different modules: PowerCapture, PowerOnLine and PowerTrend.

PowerCapture retrieves information from the analyzer and stores it a database. The retrieval frequency is adjustable; these samples are highly granular (taken every 2 seconds, for instance). For every adjustable interval (30s, 1min, 2min, etc.), Power Capture will store the result of integrating such values without losing the original highly-granular samples. The original samples are retained no longer than what is necessary (1, 2, n days) and later deleted. Nevertheless, PowerCarture is able to save the name of the capture file from those samples that have yet not been deleted. That file then receives the name of the capture file. In this way, the user gets both highly granular data and historical data separately.

PowerOnLine, which is included in PowerCapture, shows in an 8-coloured graph the samples while they are being taken. For each colour, it is possible to select the parameter it represents, for instance, graph in red voltage phase 1 and in green voltage phase 2. It is also possible to display in grids the detailed sample values in order to know the exact value of each parameter.

Finally, PowerTrend provides statistic analyses, historical analyses, graphing and impression of reports. It is possible to carry out analyses from both highly granular data from the capture files (saved using PowerCapture) and historical data from the system database. For this reason, PowerTrend enables the user to select at any time which is the data source. Furthermore, the user can define subsets of samples through filters on the set of data and make analyses of that subset. For example, calculate the maximum voltage in each phase and the time in which it happened.

It is possible to see detailed data, statistic calculations, graph and print reports for both historical data and specific data. PowerTrend's graphing system also uses 8 configurable colours.

## Features

PowerQuest meets all the information requirements regarding electrical networks. Its functions are:

- Data retrieval from the electrical network analyzer and storage of it in the form of highly granular data (capture files) and historical data.
- Online display of the samples while they are being taken, in the form of configurable graphs, or, if necessary, grids.
- Selection of data source (capture file or historical data) to make the analyses detailed below.
- Data display and analysis anywhere in the plant, statistic parameter calculation, classification statistics, data set filter selection, for specific data and historical data
- Specific and historical data report impression.
- Historical and specific data graphing. The selected subsets are also applied to graphs.

## Funcionalidades

El sistema PowerQuest cubre todas las necesidades de información en cuanto a redes eléctricas. Sus funcionalidades son:

- Captura y almacenamiento de datos desde analizador de redes eléctricas tanto en forma de datos de alta granularidad (archivos de captura) como en forma de datos históricos.
- Visualización en línea de las muestras a medida que estas son tomadas, en forma de gráficos configurables y, si es necesario
- Selección de la fuente de datos (archivo de captura o datos históricos) para realizar los análisis de datos que se detallan a continuación.
- Visualización y análisis de datos desde cualquier punto de la planta, cálculo de parámetros estadísticos, estadísticos de clasificación, selección de filtro del conjunto de datos, tanto para datos detallados como históricos.
- Impresión de reportes, tanto para datos detallados como históricos.
- Graficación, tanto para datos detallados como históricos, con facilidad de selección de campos graficados, selección de escalas, zoom y panning. El filtro seleccionado también se aplica a los gráficos.