# THE POST-PROCESSING TOOL

The POST is the professional tool specifically conceived for performing the post-processing analysis of the data recorded during the like real-time simulations and the experimental trials execution.

The POST tool is available in the EICASLAB base.

## POST OVERVIEW

Typically, during the execution of a simulated or experimental trial, only a limited number of variables of your control system may be monitored or accessible.

In EICASLAB, the SIM and the RCP Manager tools – devoted respectively to manage the like real-time simulations and the experimental trials execution – offer the possibility of plotting on the screen the trends of a pre-selected set of variables (up to 24 variables). Anyway, to understand if your control system works correctly, sometimes it is necessary a smart data processing that allows a deep offline analysis of the dynamic behaviour of the overall control variables.

For such a reason, EICASLAB:

- integrates in the SIM and the RCP Manager tools the capability of recording on the PC disk all the variables of interest, creating a set of data files called "*POST files*";

- includes a special tool – the POST tool – for performing the above mentioned smart data processing.

## HOW TO CONFIGURE A POST FILE

The data to be included in a POST file may be configured by the user with the SIMBUILDER tool.

A *POST file* is created for every programmable block of the three main EICASLAB *Working Areas* (The *Plant Area*, the *Control Area* and the *Mission Area*). The name of the *POST file* is exactly the name of its corresponding block and it will contain all and only the selected internal variables of that block. It is then easy to identify the *POST file* containing any specific variable.

## POST Highlights

- **Accurate post-processing analysis of recorded data**

- **Mathematical & Statistical functions for advanced computation**

- **Wide plotting areas fully customisable**

- **Time & phase diagrams plotting**

- **Special *revert* function**

- **Tools for professional report preparation**

**Post-processing**

## CREATION OF THE POST FILES

The POST files are automatically created by the SIM and the RCP Manager tools during the simulation or experimental trial execution and they are recorded on the PC disk.

The recorded data are saved as binary files to reduce the amount of used disk space. Besides, the user can set the frequency of the POST data recording for further reducing the used disk space and also the trial execution time.

Once created the *POST files*, the POST tool may be used to perform the accurate offline post analysis.

## HOW THE POST TOOL WORKS

The POST tool provides a smart file manager devoted to the selection of the *POST files* containing the variables that the user wants to analyse.

Once selected the POST files to be analysed, the list of the variables included in them is loaded in the *POST Processing Window*, showing the variable names assigned by the user during the design phase in SIMBUILDER.

In the *Processing Window* the user can perform a set of mathematical (addition, product, inverse, sine, cosine, exponential and much more) and statistical computations on the selected variables and he can create new variables which are functions of the others. If desired, the new variables may be recorded on a new *POST file*.
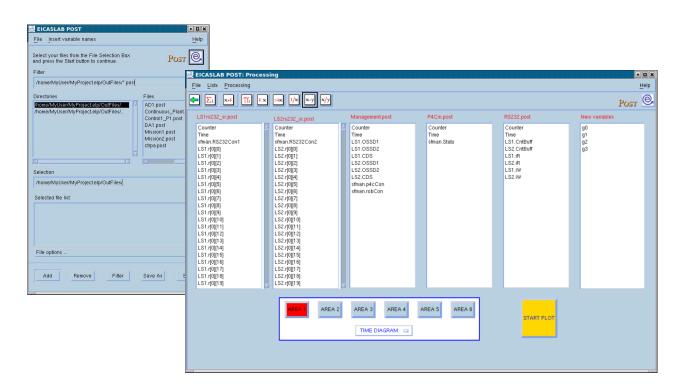
In the *Processing* Window the user can select the variables to be plotted, choosing between time or phase diagrams.

Finally the variables may be plotted in the *POST Plotting Window* where a set of plotting areas may be used and configured, each one able to show and manage up to 10 variables.

Each displayed graph can be customized by setting linear or logarithmic scales, different levels of zoom, different types of grids or various types of lines (f.i. dashed, dotted, ...).

Furthermore mathematical and statistical analysis may be performed, such as computation of number of samples, the mean value and the standard deviation of a whole graph or of a part of it.

In order to speed up the post-processing activity, the user may save some plot configurations of his particular interest, in order to quickly reload them when needed.

POST File Manager and POST Processing windows

EICASLAB POST

# POST RELEVANT FEATURES

## Use of the POST tool during a simulated or experimental trial execution – The revert function

The POST tool may be used not only after but also during a simulated or experimental trial execution. In fact the POST tool may be kept open during all the trials executions and, with the special revert function, the user can command an updating of data and a refreshing of the plotting areas.
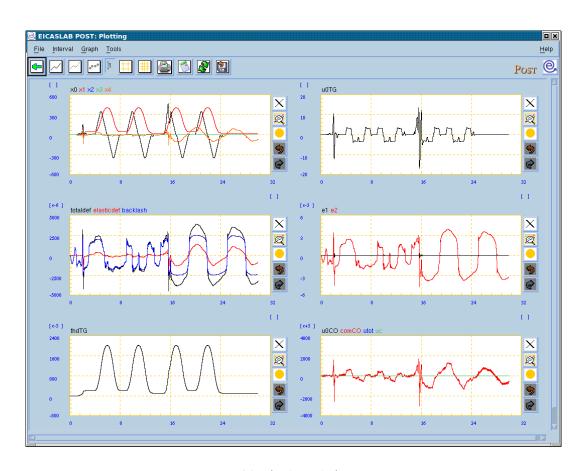
## Managing data in ASCII format

Besides binary files the POST tool can also download files in ASCII format and process the included variables.

The POST tool allows to save any variable (read from a *POST file* or created as a function of other variables) or any set of variables in ASCII files for any further use.

## Building professional report

The POST tool is useful for preparing professional technical reports. In fact it allows to capture images in the desired format for printing or being included in word processors. Such images are created starting from diagrams of variables plotted on video. The user can insert or modify notes, labels, insert titles in the axes, show significant points (using arrows, boxes, circles,…) in order to highlight any part of any graph.



POST Plotting Window

## MANUAL & DOCUMENTATION

The POST tool provides the user with all the necessary support during the post-processing analysis of the simulation results:

- a specific chapter of the EICASLAB User Manual is specifically devoted to illustrate the overall POST capabilities and help the user to make profit in using the EICASLAB software for post-processing analysis aims;

- the EICASLAB website can be directly accessed to get information, to contact us, to ask additional support for analysing control systems performance or enjoy the advantages of the EICASLAB Consultancy services.

Our service support is always at disposal of our Customers with the aim to guarantee the best assistance.

Welcome to EICASLAB Suite.
Welcome to Innovation!

SIMBUILDER
System Design Tool

SIM
"Like Real-Time" Simulation Tool

MASTER
EICASLAB Tools Manager

POST
Post-processing Analysis Tool

TARGET MANAGER
Target Manager Tool

MPI/CPO MANAGER
Identification/Optimisation Tool

HIL MANAGER
Hardware In the Loop Manager Tool

SLOW MOTION
Slow Motion View

RCP MANAGER
Rapid Control Prototyping Manager Tool

**EICAS Automazione S.p.A.**

excellence and passion
in automatic control design