The ability to display numeric data effectively in a graphical form plays a critical role in both understanding and deeper analysis of the contained information. From traditional line graphs to three dimensional surfaces, a pictorial representation lends itself to easier scrutiny and further investigation.

With PSS™E version 31, Siemens PTI has launched a bold new charting tool enabling users to introduce a powerful visual narrative into reports and presentations. This innovative feature allows engineers to interactively visualize channel data from within the main graphical user interface. Charts are displayed in a “Plot Book” – a child window within the main application. Graphs embellished with a multitude of colors, hidden nuances highlighted with customized annotations and trends displayed with similar line styles. These are just a few of the possibilities that unfold from the pages of our new plotting book.

The plotting view is conceptualized as a book – a multi-tabbed window with support for an unlimited number of pages. Breaking out of traditional bounds, each page can display an infinite number of charts. Furthermore there is no limit on the number of channels present on a chart. Editing operations can be applied at the plot, page or book level. Popup menus for both chart and page functions help users navigate through the interface faster.

Figure 1 - Multiple Plots on a Page
The plotting package has been integrated seamlessly into PSS™E so that users can now open and study channel files without having to start another application. This makes for easier plot generation. Furthermore, Channel Plots, Slider Diagrams and Spreadsheet views can be studied simultaneously from within PSS™E.

The design employs a fresh approach to data input. A channel file, once opened is displayed in a tree view. Individual channels are placed on a chart with a simple drag and drop operation from tree nodes representing the channels. Multiple channel files can be opened at the same time. Thus data from different files can coexist on a chart enabling quicker comparisons. A new plot tab within the dynamics interface contains the channel tree view. Once channel data has been displayed on a chart, it will be automatically updated on successive dynamics simulation runs.

A chart editor allows easy modification of hundreds of look and feel attributes such as background color, line display characteristics, axes titles, labels and fonts. There is no limit on the number of X, Y or Z axes. Users have complete control over the appearance and position of axes as well as corresponding details such as labels, grid lines, scale and tick marks. Customized annotation in a desired font can be placed anywhere within the chart bounds. Enhancements such as headers and footers can be added in an interactive manner. A chart is resized by dragging its corners. Users have complete flexibility in determining the position and appearance of the legend. Channels can be turned on/off by simply using checkboxes within the legend. The channel data values can be examined and modified to view results immediately on the plot. Consequently, the appearance of a chart is entirely user configurable.
Convenient interoperability with other Microsoft programs facilitates report generation. Charts can be exported effortlessly to various popular graphics formats such as Word Metafile, jpeg, gif or bitmap and then inserted into a word document. Channel data can also be exported to Excel and XML formats. A handy copy to clipboard feature can be used to copy charts from within PSS™E and paste smoothly into any other Microsoft application.

The plotting menu permits access to other PSS™E functionality such as opening a saved case or recording python scripts. Plotting actions can be recorded for later replay in batch mode. An automated script can contain both plotting and other PSS™E operations.

For those wishing to push the bounds further, some 3-D functionality is included. In addition to conventional line graphs, a multitude of other chart types are provided that include surfaces, statistical and financial charts.

PSS™E will ship with PSSPLT to allow continued use of existing scripts and until the complete feature set has been migrated. A future release will include the ability to save customized plot configurations as well as other PSS™E analysis functions. The plotting package has been designed with reusability in mind and so has the potential for integration across the entire PTI product line.

Featuring a subset of PSSPLT functionality, this first version of our plotting package is only the prelude. Subsequent releases will incorporate all of PSSPLT and more. Sit back and relax at your desktops. Siemens PTI invites you to enjoy an interactive play. The main act is yet to follow.