

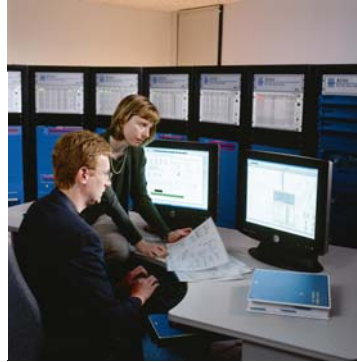
RTDS NEWS

May 2003

WHAT'S NEW AND EXCITING? THE RPC AND RSCAD!!



RPC
Processor
Card



RSCAD
Graphical
User
Interface

Worth the RISC

In September 2002, RTDS Technologies released the RPC processor card. This card is the 3rd generation processor card and the first to utilize a RISC processor. The initial application for the RPC is a more powerful and more flexible network solution.

In 1993, when the first commercial version of the RTDS Simulator was introduced, the TPC card was utilized for all real time computations. The TPC utilized two floating point Digital Signal Processors (DPS's) with a clock frequency of 12 MHz. In 1997 the 3PC card was released to complement the TPC and to expand the capability of the RTDS. The 3PC utilizes three floating point DPS's each running at 40 MHz. Our most recent processing card, the RPC, has two IBM PPC750Cxe Power PC processors each running at a clock frequency of 600 MHz!

Table 1 provides a comparison of the three processor cards with reference to the Network Solution.

TPC	3PC	RPC
21	4	1

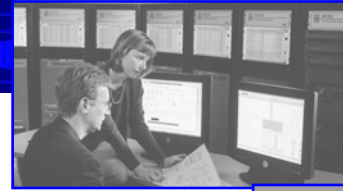
Table 1: Number of cards required to perform a 42 node network solution

In addition to solving more nodes and switches, the RPC network solution combines the best features of the TPC and the 3PC network solutions. Like the TPC, the RPC network solution is easy to use since all nodes are of the same type and they do not have to be individually labelled. The 3PC network solution is more complicated because all nodes must be named and grouped as either connector or embedded types. In the RPC network solution, all of the nodes are connector nodes! This translates into increased modeling capability and flexibility.

The next simulation models that will be tackled using the RPC are phase domain transmission lines, embedded machine models and an improved voltage source converter. The phase domain transmission line model will improve the frequency dependent representation critical to cables and the coupling characteristic between AC and DC lines. The embedded machine model will remove the numerical interface between the machine and the main network solution, hence improving numerical stability.

The RPC card is designed to run together with 3PC, WIF and IRC cards using the existing RTDS cubicles, racks and communication backplanes.

The RPC is not compatible with TPC or WIC cards. To make the upgrade to RPC's easier, RTDS



Technologies is offering an attractive exchange program. Old cards are returned to RTDS Technologies in exchange for new ones at a greatly reduced price.

Let us know if you would like more information about the RPC or the hardware exchange program.

RSCAD Taking Over

Over the last few years, RTDS Technologies has been developing a new graphical user interface for real time simulator applications. RSCAD (Real time Simulator CAD) has a similar look and feel to its predecessor PSCAD/RTDS, but includes a number of important new features.

RSCAD is a Java based program and is currently being supported under Windows NT, 2000, and XP as well as Sun Solaris. For many of our customers, operation under a Windows based operating system makes software administration much easier.

The most noticeable differences between RSCAD and PSCAD are in the added features included in the new Draft module (Fig. 1). As the power of the RTDS Simulator increases, larger and larger simulation cases are being constructed. Many of the new features in Draft were designed to make this task easier. Examples of new Draft features include Single Line Diagram Format, Hierarchy Blocks and Automatic System Initialization from an embedded loadflow program.

Draft now allows circuits to be drawn in either 3-Line (as with PSCAD) or 1-Line diagram format. The mode can be switched back and forth between the formats at anytime to select the most appropriate view. The 1-Line format, along with a zooming feature, makes it easier to view and understand larger circuits.

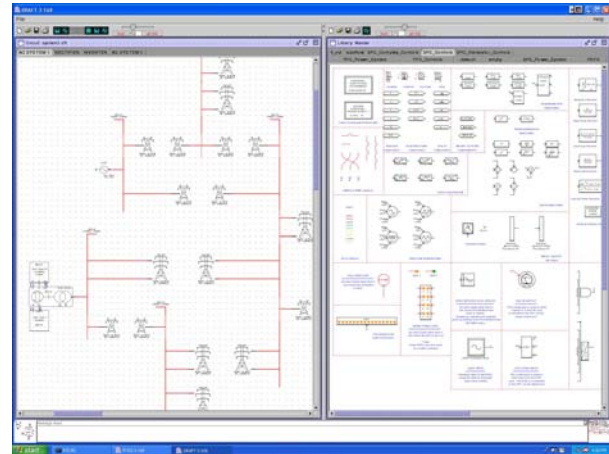


Fig. 1 – RSCAD Draft

Hierarchy blocks can now be included in Draft to simplify and clean up the Draft circuit. Power and control system details can be removed from the highest level view by burying them in hierarchy boxes. Proper use of this technique can often make cases easier to work with and easier for outsiders to understand.

A load flow program has also been added to RSCAD/Draft. After a circuit has been constructed in Draft, the loadflow can be invoked to initialize the generators, sources and dynamic loads within the circuit. With the loadflow defined, the start up of larger systems is simplified.

Further improvements and additional new features are being added to RSCAD on a continual basis and software updates are available from the *Client Resources* area of the www.rtds.com website.

RSCAD is now being delivered with all new RTDS Simulator installations and is also available to those participating in our Extended Warranty and Maintenance Program. Please contact us if you would like to upgrade to RSCAD.

Smartpark at the University of Manitoba

A New Home for 2004

At the end of 2003, RTDS Technologies Inc. will be moving to a new location in the SmartPark industrial research complex at the University Manitoba. We look forward to having more space and better facilities. We will pass on our new contact information later in the year.

Upcoming Events

IEEE/PES General Meeting

Hospitality Suite July 13-17, 2003 in Toronto, Canada

IPST 2003

Exhibition August 24-28, 2003 in Hong Kong

IEEE/PES T&D

Exhibition September 8-11, 2003 in Dallas, USA

WPRC

Hospitality Suite October 21-23, 2003 in Spokane, USA

