SimExec™ Simulation Executive and JDashboard™ Graphical User Interface

SimExec

SimExec was developed by GSE Systems as the simulation executive when running on Microsoft Windows operating systems. It provides a convenient and versatile tool for building, testing and running a simulation system. It provides a full function executive platform for both normal simulator real-time operation and on and off line engineer debugging and analysis. SimExec has proven in hundreds of simulators over many years of use to be consistent, even when enhanced with new features, enabling you to easily and confidently upgrade your executive version while meeting the demand for long simulator life cycles.

SimExec is an integrated software system which supports the development, documentation, real-time execution, and testing of a complete simulator software package. It utilizes software configuration management concepts through the use of sophisticated database structure, multiple software levels, and protection and access control methods. You can develop and test the simulation models independently of the official trainer models. When these models are thoroughly tested and accepted, they can then be incorporated into the official system.

JDashboard

JDashboard is the graphical user interface to the SimExec Environment. This interface offers the functionality of the DataBase Manager (DBM) and the Interactive Symbolic Debugger (ISD) integrated into one graphical tool. It also expands on the features of ISD by providing unlimited variable monitoring and trending.

JDashboard is installed as part of the SimExec software package and connects to the environment via an active S3server connection.

The Menu Bar provides access to settings and functions in a familiar pull down and entry fashion. The Host and Executive Connection Bar is used to control the JDashboard connection to a SimExec system and executive. The “Host” drop down text selection box is used to display and select the SimExec host system. “Port” is used to display and select the s3serv service port number. “User” allows you to select from the list of known users or displays the currently selected user name. “UDS” allows you to select the desired User Development System from the list of known systems associated with the SimExec connection. “Executive” displays the currently connected executive or a list to select from. All of these functions also allow direct entry in their text box.

JDashboard includes the capability to monitor variables and the simulation in real-time, fast rate, slow rate and step mode. This allows you to easily select which mode provides the best “view” for engineering analysis when debugging or evaluating the performance of the models.

Just as SimExec allows for a multi-user JADE modeling environment, JDashboard allows each engineer on a project to save their configured testing environment settings upon exiting JDashboard. The JDashboard State
stores your trends, monitors, tables and other windows internal to JDashboard to the layout from where they were saved. This configuration even extends to the display view “Look and Feel” preferred by each user.

The Executive Control Toolbar contains the simulation function controls in one easily viewable and accessible place.

The JDashboard trend window provides extremely flexible time versus value plots for simulation global variables. Instances of the trend window may be initiated from the main tool bar, from the desktop popup menu, or, with initial content selection, from the action menus of the Variable Database or Monitor tables.

JDashboard also includes the classic “Expert Command” field where users who wish to input single line expert commands can work in rapid entry mode. Commands that may be entered in this field include most dbm and isd commands, with the same familiar syntax and semantics as are available in console programs.

Summary

Within the JADE environment, the SimExec executive system guarantees real-time model execution to assure proper simulator response and training that is necessary to gain operator confidence and acceptance. SimExec runs consistently on all Microsoft operating systems to date and was developed for demanding nuclear simulators. It has been proven to integrate with multiple virtual DCS systems and provides a true simulator training experience.