

acsIX

Release Notes

Version 3.0

May 2010

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Chapter 1 Introduction

These release notes refer to the acsIX family of products Version 3.0 released in May 2010 which contains an updated version of the familiar acsIX application as well as an alternative user interface for acsIX called Libero.

Chapter 2 acsIX Help and Documentation

acsIX incorporates an extensive electronic Help facility. acsIX Help is accessed through the Help menu or by clicking the Help toolbar icon.

The following is a brief description of each manual included in the acsIX Help facility:

acsIX Getting Started Guide

This manual provides basic information on the installation and registration of the software. Included basic examples are designed to verify installation and functionality of the software while introducing fundamental steps such as creating Workspaces, Projects, and Block Diagrams, compiling models, and basic analysis such as plotting.

User's Guide - Introduces the user to the acsIX Integrated Design Environment (IDE), presents an overview of simulation workflow using both CSL and Block Diagram modeling, describes analysis functions associated with plotting, exporting, and printing data, and introduces advanced topics such as debugging, managing block libraries of PowerBlocks, and external C and Fortran code with models. Several appendices are provided which include an overview of the Simulation API, mathematical background, file types, error messages, and details on editing plots.

Model Development Example Projects - Introduces the user to the acsIX development environment through numerous example projects aimed specifically at developing the user's ability to develop useful models.

Model Analysis Example Projects - Introduces the user to acsIX's analysis capabilities through numerous example projects aimed specifically at the analysis of models.

Language Reference Manual - Provides a detailed overview of the Continuous Simulation Language (CSL), syntactical information, the programming elements which comprise the CSL modeling language, the use of macros, and acsIX system symbols.

Command Reference Manual - Presents detailed syntactical information on commands for control of a simulation and analysis of simulation data using functions, M-Files, and scripts.

The full text of the acsIX Getting Started Guide, User Guide, Language Reference Manual, and Command Reference Manual are available through the acsIX help facility. In addition, PDF files are available in the Documentation folder under the acsIX installation directory.

MC Modeler User's Guide – Introduces the user to the MC Modeler application, which is used to create statistical models for performing Bayesian inference studies using MCMC sampling techniques.

Optimum User's Guide – Introduces the user to acsIX OPTIMUM features, which include Parameter Estimation, Min/Max analysis, Sensitivity studies and Monte-Carlo analysis.

ACSL 11.8 Migration Guide - Presents the procedures for migrating legacy ACSL 11.8 model source code and supporting files for use within acsIX.

Release Notes – Provides information specific to the current release, including overview of improvements, documentation information, installation information, known issues and technical support information.

2.1 Installation

Chapter 2 of either Getting Started Guide contains detailed instructions on the installation of both Single User Licenses (SUL) and Floating Network Licenses (FNL) of acsIX. The first time acsIX is installed a 30 day demonstration license is provided. By installing acsIX, the Licensee agrees to all terms of the End User License Agreement (EULA). For license information or questions send email to sales@acslx.com.

For installation support contact support@acslx.com or to purchase the acsIX software contact sales@acslx.com. For more information on acsIX and appropriate contact information go to www.acslx.com.

Chapter 3 New Features for acsIX

Version 3.0

The following section describes new features introduced since the last release.

3.1 Libero

Libero is an alternative user interface for acsIX which provides a streamlined workflow, and capabilities for quickly plotting, adjusting parameters, and loading/editing/displaying data in an intuitive, interactive way. Model files can be opened, compiled and results plotted with only a few mouse clicks. Parameters can be adjusted using slider controls, and measured data can be viewed and edited using an integrated spreadsheet. Web integration allows Libero to be easily used with web-based modeling resources (e.g., online model libraries, web-based parameter databases, cloud computing resources, live interactive help). Libero is built on the computational engine of acsIX, so all the modeling and analytical capabilities of the full acsIX environment are available in Libero:

- The full CSL equation-based modeling language
- A large set of robust ODE and DAE solvers
- Support for modeling both continuous and discrete behavior
- Scripting of simulation runs and analyses using the M language
- Capabilities for parameter estimation, sensitivity analysis and Monte Carlo analysis
- MCMC techniques for Bayesian inference

Libero is available to all acsIX users with active maintenance.

3.2 Support for Intel FORTRAN Compiler

acsIX can now use CSL model code to generate FORTRAN code compatible with Intel's FORTRAN compiler.

3.3 Increased Support of Legacy ACSL v11.8 CSL Translator

Can now make available a ported version of the ACSL 11.8 translator for use with the GNU FORTRAN compiler and the acsIX front-end

Fixed Issues

- Fixed bug with getmdl(...) and elements of an array
- Fixed bug with txt2str and empty text arrays
- MC Modeler now automatically prepares all required output variables
- Upgraded MS Excel libraries to reduce potential for leftover excel.exe processes when using xlsRead and xlsWrite
- Removed erroneous debug reports from m-functions
- Added truncation limits to gamma distribution function
- Minimize and maximize functions can now be used when no model is loaded.
- Automatically switch to Quasi-Newtonian optimization from Nelder-Mead is selected with only one parameter and display warning
- Made change to m-code editor to remove ability to place break-points
- Fixed bug with building Block-diagram models using MSVS v9 compilers
- Added MSVS v8 redistributable libraries to installer
- Added normprnd and normvrnd functions to sample from the normal distributions by specifying a mean and a precision or variance respectively
- Added Morris Screening method for Global Sensitivity Analysis
- Fixed bug where missing terminal carriage returns were causing instability in CSL code
- Improved error handling and diagnostic messages of both pltscript and uiscript functions
- Fixed bug where limits resulting from Interval statement in MC Modeler generated code were not applied to proposal code

Chapter 4 Known Issues

The following sections describe known issues. Please submit any additional Issues and Change Requests (CR) to Technical Support via email to support@AEgisTG.com.

4.1 Quote-delimited Comments

Quote-delimited comments in CSL code cannot be put inside of parenthesized expressions, else the translator will assume that it might be an argument to a macro and will leave it in place.

4.2 Cut, Copy and Paste in Block Diagram

The Block diagram Window does not currently support the ability to Cut, Copy and Paste (Ctrl-X, C, and V).

Work Around:

- (1) A user defined block library can be created. The block that is desired to be copied can be drag and dropped into the Block Diagram. or
- (2) A new block can be created and the CSL/GSL code can be cut and pasted from the code editor window.

4.3 Using Watch Window for Array Data Types

The watch window does not support the ability to watch individual array element values. If an array variable is specified in the watch window, the value of the first element of the array is displayed.

4.4 Use of Large Fonts

On Windows 2000 Operating System if a computer has the Display Font Size set to “**Large Fonts**”, the user may experience screens with words that appear to be cutoff.

Work Around:

- Change the “Large Fonts” setting to “**Small Fonts**”. This is located at **Start > Settings > Control Panel > Display > Settings > Advanced**.

4.5 Watch Variable Inconsistency

Watch window variables are displayed anytime the simulation stops. The three stop conditions that generally occur are break points set in debug mode, manual intervention (e.g. stop button pressed), or a normal termination of the simulation (e.g. **TERMT** condition is met). The variables values displayed in the watch window are sometimes different than the values shown using the **DISPLAY** command upon termination of a simulation.

Work Around:

- The watch window is normally used to view variable values when a debug break point occurs. In this instance, the watch window values and the **DISPLAY** values are consistent and correct. If termination occurs through manual intervention or normal simulation termination, the watch window and **DISPLAY** values may differ. In these instances, the Watch window value is not being updated to show the final value. The **DISPLAY** value is correct. See **DISPLAY** in the Command Reference Manual for more information.

4.6 Plotting Vectors on Runtime Plots

When mapping an array variable (entry) to a plot block, the resulting output values are not displayed for runtime plots.

Work Around:

- (1) Manually edit the array variable name as a scalar element so that it can be plotted using runtime plots (e.g. the plot wizard lists the array variable "foo" - manually edit it to read "foo(1)) or
- (2) Create the plot in the analysis mode (after a simulation run) using any of the variety of means to create a plot (e.g. a plot block in block diagram mode, through command line, etc.)

4.7 CSL Utility Routines not implemented

The following CSL utility routines are not implemented: **AGET, APUT, DEBUG, LISTD, SETI, and SETR**. In addition, the routine to add a customer integration algorithm has not been implemented.

- Work Around:
 - These CSL utility routines are not implemented in this version of acsIX.

4.8 Direct Pass through of Data in a Compound Block

When connecting an input port directly to an output port within a compound block, the data may become inaccessible (e.g. cannot plot or list).

Work Around:

- Insert a Gain PowerBlock from the Linear Operations Block Library between the input and output ports - use the default constant value of 1.

4.9 Debugging with models that INCLUDE Macros

When running in Debug Mode, breakpoints may not be recognized.

Work Around:

- This is not currently implemented in this release of acsIX.

4.10 DASSL Algorithm not supported

When setting the integration algorithm to DASSL (IALG=10), the state variables are not updated.

Work Around:

- This is not currently implemented in this release of acsIX

Chapter 5 Technical Support

For detailed information on using acslX refer to the on-line acslX User's Guide. Extensive examples are provided in the Model Analysis and Development Example Projects Manuals which covers a wide variety of topics. If the problem is about using acslX product family, please consult the manuals provided online or in .pdf format with the installation of the software. If additional help is required, acslX technical support can be contacted through the following means.

Website

The acslX website at www.acslX.com provides a variety of resources for technical support.

E-Mail

Questions can be sent directly via e-mail to the technical support team. Technical Support business hours are Monday through Friday, 8:00 AM to 5:00 PM, Central Time (US & Canada). For Technical Support questions and trouble reports about acslX, send email to: support@acslx.com.

Telephone

For telephone support, call AEgis Technologies during normal business hours Monday through Friday, 8:00 AM to 5:00 PM, Central Time (US & Canada) at: (256) 922-0802.

FAX

You can also fax questions directly to the acslX technical support teams. For technical support issues, be sure to list "acslX Support" as the recipient on the cover page. Fax questions to the following number: (256) 922-0904.