Release Notes

Version 2.4

March 2008

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Chapter 1 Introduction

These release notes refer to the acslX family of products Version 2.4 released in March 2008.

Prior to the current release, these products consisted of:

acslXtreme - Software application providing model development, execution, and analysis of computer simulations of continuous dynamic systems and processes.

acslXpress - Software application providing execution and analysis of computer simulations of continuous dynamic systems and processes. Models developed using acslXtreme can be executed and analyzed with acslXpress.

acslXtreme Optimum - An enhanced version of acslXtreme that includes analysis functions for parameter estimation, min/max optimization, sensitivity analysis, and Monte Carlo simulation.

acslXpress Optimum - An enhanced version of acslXpress that includes analysis functions for parameter estimation, min/max optimization, sensitivity analysis, and Monte Carlo simulation.

As of present version, the acslXtreme, acslXpress, and OPTIMUM products have been consolidated into a single product, now called acslX.

In addition to the consolidation of products, new features and bug fixes have been introduced in this version as described in the following sections.

Chapter 2 acslX Help and Documentation

acslX incorporates an extensive electronic Help facility. acslX 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 acslX Help facility:

acslX 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 acslX 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 acslX 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 acslX'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 acslX 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 acslX Getting Started Guide, User Guide, Language Reference Manual, and Command Reference Manual are available through the acslX help facility. In addition, PDF files are available in the Documentation folder under the acslX installation directory.

Optimum User's Guide – Introduces the user to acslX 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 acslX.

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 acslX. The first time acslX is installed a 30 day demonstration license is provided. By installing acslX, the Licensee agrees to all terms of the End User License Agreement (EULA). For license information or questions send email to license@AEgisTG.com.

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

Chapter 3 New Features for acslX Version 2.4

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

3.1 Additional Parameter Estimation Algorithms

Parameter estimation using nonlinear weighted least-squares is now supported in acslX, using either a Levenberg-Marquardt solver, or a solver based on the Generalized NL2SOL package..

3.2 Additional Runtime Plotting Capabilities

Runtime plots views now support a floating “slider” window which can be used to directly manipulate the values of model constants using a convenient “slider” control. The simulation is automatically re-executed each time a constant is updated via the slider, and the corresponding runtime plot re-drawn in real time.

3.3 Other Usability Improvements to Runtime Plots

It is also not possible to define runtime plots which are displayed at the end of a simulation run, instead of during the simulation run. This has the advantage of allowing the simulation to run faster, while still presenting the results of each run automatically.

3.4 Current Directory Browser Window

A docking tool window has been added which displayed the contents of the current directory, and can be used to change the current directory (as would be done with the “cd” M command). This view can be used to delete and rename files and folders, or to create and edit certain file types, including CSL, GSL, M, DAT, CSV and MAT files. acslX workspaces can also be loaded from this view. Data files (DAT. MAT, CSV) can be loaded or plotted.

3.5 Implemented Additional Statistical Distributions

A variety of M functions related to statistical distributions have been added, including random number generators, PDF, log PDFs, CDFs, inverse CDFs, and functions for computing the moments of distributions. Refer to the Optimum User’s Guide for details.

3.6 Improvements to MCMC Functions

A adaptive random walk proposal kernel has been added to the MCMC infrastructure.

3.7 Automatic Software Update Checking

acslX now checks for availability of a software update, and informs the user if one is available.

3.8 Integrated Tutorials

An integrated tutorial browser is now included with acslX for stepping through sets of slides which guide new users in basic operation of the application.

Fixed Issues

The following sections describe known issues that have been fixed for this release.

- Fixed problem with AcslRunToTime API which was causing client code to hang in some cases
- Fixed errors with save prompting logic when a modified file was closed in certain cases
- Implemented workaround for incorrect rendering of line numbers on code editor on certain systems
- Improved performance and behavior of code completion popup: now works like Visual Studio
- Improved usability of the search and replace dialogs in the code editors
- Fixed unhandled exception which came about when using certain toolbar buttons after closing a workspace
- Fixed problems with rendering of scientific notation numbers in code editors
- Fixed some problems with formatting of post MC run reports
- Added ability to import strings from a database to SQL M functions
- Fixed problem with code generation for a CSL DO loop which iterates in reverse
- Implemented a workaround for TERMT problems with ODEPACK and CVODE solvers
- Fixed a problem with DATA command which caused crash when comma used as a separator
- Improved behavior of persistence of plot settings when axis ranges were changed
- Fixed problem with PE settings wherein a descriptor could not be removed
- Disambiguated behavior for Ctrl-B and Ctrl-C keyboard accelerators
- Fixed interpreter problems caused by paths with a single quote in the name
- Improved some text window output formatting for commands like “display”

- Added warning on installer regarding default path when installing to Vista
- Fixed problem wherein the intended line was not scrolled into visibility following a debug break
- Fixed problems with BD zooming
- Fixed problem wherein focus was being put back on text window following a command
- Added toolbar buttons for report views
- Added indication of plot handle on document tab for plot views
- Fixed problem which prevented global constants in BD from showing up in constants dialog in some cases
- Fixed some problems with project “clean” logic
- Fixed various problems with repainting of UI elements on certain systems
- Updated versions of TeeChart and Syncfusion components to resolve a number of problems
- Fixed problem caused by the block “enable rotation” property
- Improved the behavior of the “load” command for dealing with non-numeric characters
- Fixed problem with string literals in subroutine arguments being converted to lower case in some models

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 Highlight and Dragging in Code Editor

Problems exist when trying to highlight and drag text in the code editor; this is a problem with a 3rd party component using by acslX, and will be fixed when then vendor of the component provides a patch, which should happen by the date of the next acslX release.

4.2 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.

4.3 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.

4.4 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.

4.5 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.**

4.6 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.

4.7 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.)

4.8 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 acslX.

4.9 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.

4.10 Analysis Commands that work only with Real or Complex Numbers

The following commands execute properly at the **>** prompt in the command window on real number values but not complex: **'^', ATAN2, POW2, and SCHUR**. In addition, the **QR** command works for complex numbers but not real.

Work Around:

- Will be implemented in a future release.

4.11 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 acslX.

4.12 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 acslX

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@AEgisTG.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.