SEER-SEM 8.0 Release Notes

Welcome to the SEER for Software (SEER-SEM) 8.0 August 2011 maintenance release. These release notes are a supplement to your existing user manual and a guide to new SEER-SEM features and enhancements.

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Quick Launch Options Dialog Box

SEER-SEM 8.0 includes a new Quick Launch Options dialog box, which appears when you first open the program (unless it has been disabled using "Don't show again," as described below). It includes the following options:

Option	Description
Guide me in creating an estimate	Brings up the SEER for Software Project Assistant, which gives you one-step-at-a-time help in creating a new SEER-SEM estimate.
Create a new project	Brings up the Create/Modify WBS Element dialog box, allowing you to create a new project without the help of the Project Assistant.
Load an existing project	Opens a popup menu listing recently opened project files. The More projects entry on the popup menu brings up the Open dialog box, listing the projects in the default SEER-SEM Project directory.
Create project from scenario	Create a new SEER-SEM project based on a scenario. The scenario will guide you through a series of dialog boxes in which you can select work elements or parameter settings.
Don't show again	Click on this checkbox so that it is marked if you do not want the Quick Launch Options dialog box to appear when you open SEER-SEM. You can always re-display the Quick Launch dialog box by pressing the Q key while in the start-up screen.

Project Assistant

The Project Assistant is a tool for creating all or part of a SEER-SEM project. It leads you through the process of creating each component of either a project or program. The Project Assistant is an aid for new or casual SEER-SEM users to guide them through the process of creating an estimate. Once information is entered, the Project Assistant loads the estimate information into SEER-SEM; creating a new project, or adding to an existing project.

Getting Started with the Project Assistant

The Project Assistant can be accessed from within the Create/Modify WBS Element dialog box or the SEER-SEM toolbar. If you do not currently have a project open in SEER-SEM, the Project Assistant will create a new one, along with as many subordinate programs as you specify. If a project is currently open, the Project Assistant will create a program element plus subordinate components. The Project Assistant can be used to create just one element in SEER-SEM or several at a time.

Create/Modify WBS Element – Guide Me Using Project Assistant

Project Assistant Button on Toolbar

Project Assistant Button on Quick Launch Options

Begin Your Estimate Tab

The Begin Your Estimate tab is where you initially specify the Project or Program being created, and also subordinate elements (programs or components) that are created as you iterate back to this tab.

Begin Your Estimate Tab

Item	Description
Description	The name of the Project, Program or Component WBS element. The text that you initially enter in the Description field will become the default Program Level Description in the Summary tab.
	The Project Assistant applies the Description according to the following rules:
	1. When it creates a project, the Description text becomes the name of the project, the Program WBS element, and the first Component WBS element.
	2. When it creates a Program WBS element, the Description text becomes the name of the Program and the first Component WBS element.
	3. Each time that it creates a subsequent Component WBS element, the new Description text becomes the name of that Component.
Start Date	The start date of the project or WBS element. To enter a start date, click on the down-arrow to the right of the field and select the date from the pop-up calendar.

Origin (Acquisition Method)	Select a SEER-SEM Acquisition Method knowledge base for the project or for the current WBS element.
	If you select Commercial Off-the-Shelf (COTS), the Project Assistant will skip the Development tab, and the Size tab will display special, COTS-only sizing options.
	For all other Origin selections, the Project Assistant will display the Development tab, along with standard sizing options in the Size tab.
Current Estimate	The Current Estimate Panel displays the project's estimated effort, duration, and cost, based on your selections so far.
	After you make or change a selection, Project Assistant will update the estimate; you can also update it by clicking on Update.
	To view charts showing the current effort, duration, and cost risks for the project, click on Chart.
Guidance	The Guidance panel provides background information on the items in the current tab. The appropriate Guidance text will be displayed when you hover the mouse pointer over an item, or when you select that item.
	Depending on the subject, there may be a More Guidance link. If you click on it, the program will bring up the subject's main help page in the help browser.
Help	Brings up this help system.
Back	Return to the previous tab.
Next	Go to the next tab. Each tab is a step in the process of creating a project, and the specific effects of using the Back and Next buttons will depend on the options which you have already selected.
Cancel	Exit the SEER for Software Project Assistant without creating a project.

Select A Sizing Approach Tab

Select the sizing method for the current component. The contents of this tab will vary depending on whether COTS has been selected in the Origin input on the Description tab. This shows what would be expected if COTS has not been selected as the origin.

Among the sizing options is Analogy Based Sizing. See a description of this feature, also available in the main SEER-SEM interface.

Select A Sizing Approach Tab

Item	Description
Select a Sizing Approach	Select and specify the sizing method by double clicking on it. Sizing methods are listed in both the New and Pre-existing tabs in tree-structure format, with related types of sizing methods grouped under headings; double-click on a heading to expand or close its list of sizing methods.
New	Double-click on a sizing method in the New tab to size new code.
Pre-existing	Double-click on a sizing method in the Pre-existing tab to size pre-existing code.
	Reuse details: Click on the Reuse details button to bring up the Reuse details dialog box, and set the percentages of redesign, reimplementation, and retest required for pre-existing code. You can enter Least, Likely, and Most percentages for all three categories. Click on the "Redesign required," "Reimplementation required," and "Retest required" labels to bring up help pages describing each reuse requirement category.
Current Estimate	The Current Estimate Panel displays the project's estimated effort, duration, and cost, based on your selections so far.

	After you make or change a selection, Project Assistant will update the estimate; you can also update it by clicking on Update.
	To view charts showing the current effort, duration, and cost risks for the project, click on Chart.
Guidance	The Guidance panel provides background information on the items in the current tab. The appropriate Guidance text will be displayed when you hover the mouse pointer over an item, or when you select that item.
	Depending on the subject, there may be a More Guidance link. If you click on it, the program will bring up the subject's main help page in the help browser.
Help	Brings up this help system.
Back	Return to the previous tab.
Next	Go to the next tab. Each tab is a step in the process of creating a project, and the specific effects of using the Back and Next buttons will depend on the options which you have already selected.
FINISH	Create an estimate in SEER-SEM and exit the Project Assistant.
Cancel	Exit the SEER for Software Project Assistant without creating a project.

Select A Sizing Approach (COTS)

If you select Commercial Off-the-Shelf (COTS) in the Description tab, you will see a somewhat different version of the Scope Tab.

Select A Sizing Approach Tab (COTS)

Item	Description
Off-the-Shelf	Select a SEER-SEM COTS Component Type knowledge base for the COTS

Component Type	WBS element.
Sizing Method	Select a SEER-SEM COTS sizing method: Features Sizing based on typical COTS functionality. Object Sizing For components implemented as objects.
Specify Size	Click on the Specify Size button to bring up the Sizing dialog box.
Current Estimate	The Current Estimate Panel displays the project's estimated effort, duration, and cost, based on your selections so far. After you make or change a selection, Project Assistant will update the estimate; you can also update it by clicking on Update. To view charts showing the current effort, duration, and cost risks for the project, click on Chart.
Guidance	The Guidance panel provides background information on the items in the current tab. The appropriate Guidance text will be displayed when you hover the mouse pointer over an item, or when you select that item. Depending on the subject, there may be a More Guidance link. If you click on it, the program will bring up the subject's main help page in the help browser.
Help	Brings up this help system.
Back	Return to the previous tab.
Next	Go to the next tab. Each tab is a step in the process of creating a project, and the specific effects of using the Back and Next buttons will depend on the options which you have already selected.
FINISH	Create an estimate in SEER-SEM and exit the Project Assistant.
Cancel	Exit the SEER for Software Project Assistant without creating a project.

Classify This Software Tab

In the Classify tab, you select the knowledge bases which most accurately describe the operating environment, purpose, and development standards of the software under development.

Classify This Software Tab

Item	Description
Operating Environment	This sets the type of environment in which the program will operate. Select a SEER-SEM Platform knowledge base for the current element.
Type of Application	Select a SEER-SEM Application knowledge base for the current element.
Standard or Quality Target	Select a SEER-SEM Development Standard knowledge base for the current element.
Current Estimate	The Current Estimate Panel displays the project's estimated effort, duration, and cost, based on your selections so far.
	After you make or change a selection, Project Assistant will update the estimate; you can also update it by clicking on Update.
	To view charts showing the current effort, duration, and cost risks for the project, click on Chart.
Guidance	The Guidance panel provides background information on the items in the current tab. The appropriate Guidance text will be displayed when you hover the mouse pointer over an item, or when you select that item.
	Depending on the subject, there may be a More Guidance link. If you click on it, the program will bring up the subject's main help page in the help browser.
Help	Brings up this help system.
Back	Return to the previous tab.

Next	Go to the next tab. Each tab is a step in the process of creating a project, and the specific effects of using the Back and Next buttons will depend on the options which you have already selected.
FINISH	Create an estimate in SEER-SEM and exit the Project Assistant.
Cancel	Exit the SEER for Software Project Assistant without creating a project.

Describe the Development Method Tab

Select the component's development method and programming language.

Describe the Development Method Tab

Item	Description
Development Process	Select a SEER-SEM Development Method knowledge base for the project or for the current WBS element.
Language or Toolset	Select a programming language for the project or for the current WBS element. The Language selection will be used for the Component WBS element's Function Implementation Method parameter selection when the project is output to SEER-SEM.
Current Estimate	The Current Estimate Panel displays the project's estimated effort, duration, and cost, based on your selections so far.
	After you make or change a selection, Project Assistant will update the estimate; you can also update it by clicking on Update.
	To view charts showing the current effort, duration, and cost risks for the project, click on Chart.
Guidance	The Guidance panel provides background information on the items in the current tab. The appropriate Guidance text will be displayed when you hover the mouse pointer over an item, or when you select that item.

	Depending on the subject, there may be a More Guidance link. If you click on it, the program will bring up the subject's main help page in the help browser.
Help	Brings up this help system.
Back	Return to the previous tab.
Next	Go to the next tab. Each tab is a step in the process of creating a project, and the specific effects of using the Back and Next buttons will depend on the options which you have already selected.
FINISH	Create an estimate in SEER-SEM and exit the Project Assistant.
Cancel	Exit the SEER for Software Project Assistant without creating a project.

Characterize the Risk Tab

The Risk tab is where you set the main risk factors for the project.

Characterize the Risk Tab

Item	Description
Requirements Volatility	Set the anticipated frequency and scope of change in the requirements after preliminary design starts.
	See the Requirements Volatility parameter for a detailed description of the choices.
Risk Tolerance	Set the probability that the project will be completed on schedule. See Risk for a detailed description of the choices.
Current Estimate	The Current Estimate Panel displays the project's estimated effort, duration, and cost, based on your selections so far.
	After you make or change a selection, Project Assistant will update the

	estimate; you can also update it by clicking on Update.
	To view charts showing the current effort, duration, and cost risks for the project, click on Chart.
Guidance	The Guidance panel provides background information on the items in the current tab. The appropriate Guidance text will be displayed when you hover the mouse pointer over an item, or when you select that item.
	Depending on the subject, there may be a More Guidance link. If you click on it, the program will bring up the subject's main help page in the help browser.
Help	Brings up this help system.
Back	Return to the previous tab.
Next	Go to the next tab. Each tab is a step in the process of creating a project, and the specific effects of using the Back and Next buttons will depend on the options which you have already selected.
FINISH	Create an estimate in SEER-SEM and exit the Project Assistant.
Cancel	Exit the SEER for Software Project Assistant without creating a project.

Designate Staffing Approach Tab

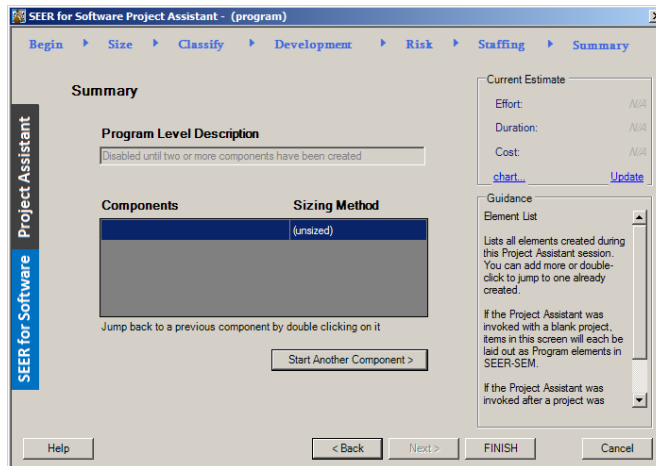The Staffing tab is where you set the main factors which affect staffing.

Designate Staffing Approach Tab

Item	Description
Key Staffing Constraint or Objective	Select the basic approach that the project will take with regard to staffing. You can select between two types of staffing objective, minimum time or optimal effort, or set specific staffing constraints.

Staffing Constraint	If you select Constrained staff under Key Staffing Constraint or Objective, the Staffing Constraint inputs will become available. You can set the Minimum Staff (the least number of developers who will be assigned to the project at the same time), and the Maximum Staff (the maximum number of developers who can be assigned to the project). Estimated staffing may be below the maximum, but never above it.
Staffing Ramp Up	The rate at which staff can be added to a project. Staffing Ramp Up corresponds to the Complexity (Staffing) input in the following way: The Very Rapid Ramp Up selection equals the Very Low Complexity setting, while the Extremely Slow Ramp Up selection is the equivalent of Extra High Complexity, with the other settings mapped accordingly, so that faster ramp Up equals lower Complexity, and slower Ramp Up equals higher Complexity. This is because in a complex project, interdependencies between parts of the project limit the amount of work that can be done in parallel, while in a relatively simple project, a large number of people may be able to work on various parts of the project independently.
Current Estimate	The Current Estimate Panel displays the project's estimated effort, duration, and cost, based on your selections so far. After you make or change a selection, Project Assistant will update the estimate; you can also update it by clicking on Update. To view charts showing the current effort, duration, and cost risks for the project, click on Chart.
Guidance	The Guidance panel provides background information on the items in the current tab. The appropriate Guidance text will be displayed when you hover the mouse pointer over an item, or when you select that item. Depending on the subject, there may be a More Guidance link. If you click on it, the program will bring up the subject's main help page in the help browser.
Help	Brings up this help system.
Back	Return to the previous tab.
Next	Go to the next tab. Each tab is a step in the process of creating a project, and the specific effects of using the Back and Next buttons will depend on the options which you have already selected.
FINISH	Create an estimate in SEER-SEM and exit the Project Assistant.
Cancel	Exit the SEER for Software Project Assistant without creating a project.

Summary Tab

The Summary tab displays the name of the Program WBS element, along with a list of all of the Component WBS elements currently included in the project.
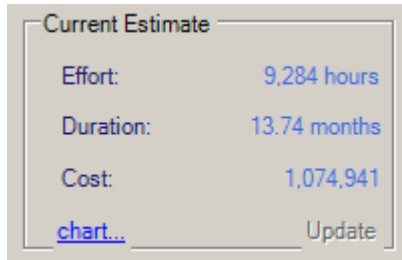

Summary Tab

Item	Description
Program Level Description / Project Level Description	Shows the name of the project or the program WBS element, depending on whether the Project Assistant was started with a project having been created or without a project having been created.
Component List	Lists each of the components in the project, along with its sizing method. You can edit a component by double-clicking on it; this will return you to the Description tab, with that component's information displayed.
Start Another Component	To create a new component, click on the Start Another Component button; this will return you to the Description tab, where you may enter information for the new component.
Current Estimate	The Current Estimate Panel displays the project's estimated effort, duration, and cost, based on your selections so far.
	After you make or change a selection, Project Assistant will update the estimate; you can also update it by clicking on Update.
	To view charts showing the current effort, duration, and cost risks for the project, click on Chart.
Guidance	The Guidance panel provides background information on the items in the current tab. The appropriate Guidance text will be displayed when you hover the mouse pointer over an item, or when you select that item.
	Depending on the subject, there may be a More Guidance link. If you

	click on it, the program will bring up the subject's main help page in the help browser.
Help	Brings up this help system.
Back	Return to the previous tab.
Next	Go to the next tab. Each tab is a step in the process of creating a project, and the specific effects of using the Back and Next buttons will depend on the options which you have already selected.
FINISH	Create an estimate in SEER-SEM and exit the Project Assistant.
Cancel	Exit the SEER for Software Project Assistant without creating a project.

Note: If you have at least one un-sized item in the Summary Tab, the Size by Comparison dialog box will come up when you click on the click on the ESTIMATE, Next, or FINISH buttons.
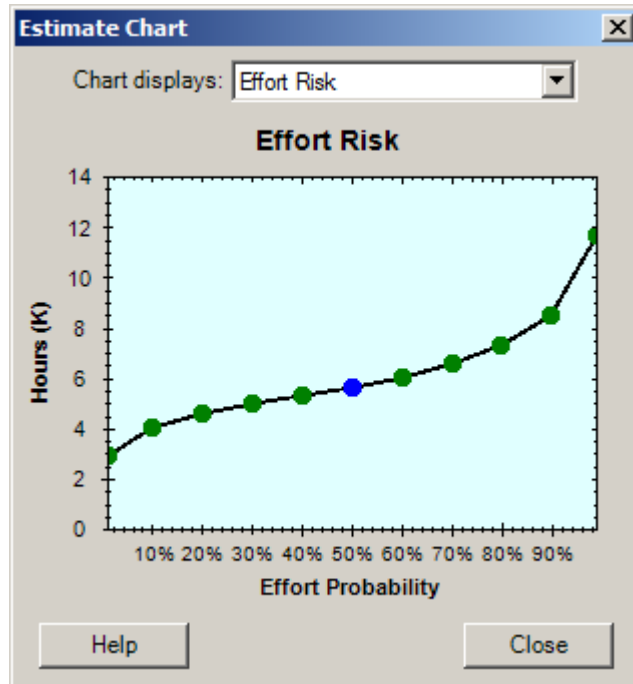
Current Estimate Panel (All Tabs)

Current Estimate Panel

The Current Estimate panel lets you evaluate critical details of the project estimate before sending it to SEER-SEM. It appears in the upper right of all Project Assistant tabs, and displays the project's estimated effort, duration, and cost, based on your selections so far. After you make or change a selection, Project Assistant will update the estimate; you can also update it by clicking on Update. To view charts showing the current effort, duration, and cost risks for the project, click on Chart.

Item	Description
Effort	Estimated effort for the project, determined from your settings. Effort is given in 152-hour person months. Effort includes direct labor expended from System Requirements Design through System Integration activities.
Duration	Estimated duration for the project, determined from your settings. This estimate combines all estimated activities from software requirements through final integration and test. Duration is given as a standardized 21.67 working days per month, given 152 working hours per month.
Cost	Estimated cost for the project, determined from your settings. Cost is given at an average monthly labor rate of 17400, with 152 working hours per month.

Estimate Chart

The Estimate Chart appears when you press the chart... button in the Current Estimate area on any tab. It displays a risk profile chart for effort, duration or cost.

Estimate Chart

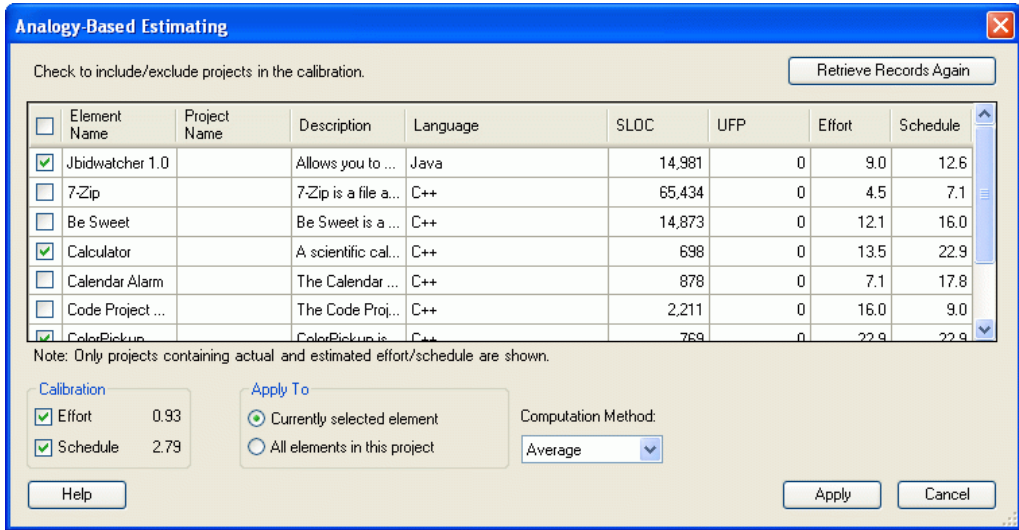| Item	Description
Effort	Estimated effort for the project, determined from your settings. Effort is given in 152-hour person months.
Duration	Estimated duration for the project, determined from your settings. Duration is given as a standardized 21.67 working days per month, given 152 working hours per month.
Cost	Estimated cost for the project, determined from your settings.

Analogy-Based Estimating

Analogy-Based Estimating (available from the Estimate menu) allows you to automatically calibrate your estimate based on projects selected from the SEER Historical Database (SEER-HD). SEER-SEM will compute calibration factors based on the selected projects' estimated and actual development schedule and effort, then apply those factors to your estimate.

Analogy-Based Estimating Dialog Box

The following items appear on the Analogy-Based Estimating dialog box:

Item	Description
Retrieve Records Again	Brings up the Retrieve Items From Repository dialog again so that you can change your search criteria.
project list	Select projects from SEER-HD to use for calibration. See Project List, below.
Calibration	Chose the factors to be calibrated. You can choose effort, schedule, or both.
Effort	To calibrate effort based on the selected projects, click on the checkbox so that it is marked.
Schedule	To calibrate schedule based on the selected projects, click on the checkbox so that it is marked.
Apply To	Apply analogy-based calibration to the current work element or the entire project.

Currently selected element	Apply calibration only to the work element currently selected in the WBS window.
All elements in project	Apply calibration to the entire project.
Computation Method	
Median	Use the median or 50th percentile of the calibration factors from the selected data set.
Average	Use the average or mean calibration factor from the selected data set. The average can be influenced by outliers in the data set.
Help	Brings up this help page.
Apply	Exit the dialog box, applying calibration based on your selections.
Cancel	Exit the dialog box without making any changes.

Project List

The project list includes all of the projects in your current SEER Historical Database. You can use the checkboxes to select projects to be used in calculating calibration factors.

Item	Description
checkboxes	To select a project, click on the checkbox to the left of its name. To select all projects, click on the checkbox in the column header row. SEER-SEM will use all selected projects in calculating calibration factors.
Element Name	The name of the work element.
Project Name	The name of the project which includes the work element.
Description	The description of the work element.
Language	The work element's programming language (Function Implementation Mechanism).
SLOC	The size of the work element in source lines of code.
UFP	The size of the work element in unadjusted function points.
Effort	The effort associated with the work element, in months.
Schedule	The work element's schedule duration, in months.

Analogy-Based Sizing

You can automatically estimate the size of a work element based on projects selected from the SEER Historical Database (SEER-HD). SEER-SEM will compute size based on the selected projects' size, then enter that size in the work element.

Analogy-Based Sizing Dialog Box

The following items appear on the Analogy-Based Sizing dialog box:

Item	Description
Retrieve Records Again	Brings up the Retrieve Items From Repository dialog again so that you can change your search criteria.
project list	Select projects from SEER-HD to use for sizing. See Project List, below.
Show Size In	Choose the metric in which the size of the selected project will be displayed.
SLOC	Filter on projects that have use source lines of code as a size measure.
UFPs	Filter on projects that have use unadjusted function points as a size measure.
size display	Displays the size of the selected project in the metric which you chose.
Enter Into	Choose where the size will be entered.
New	Enters the analogy-based size as new code.
Pre-existing	Enters the analogy-based size as pre-existing code.

Computation Method	Describes how size (or calibration factors) from the selected data set are aggregated and used.
Median	Use the median or 50th percentile of the sizes from the selected data set for the Likely value, the 10th percentile for Least, and the 90th Percentile for Most.
Average	Use the average or mean size from the selected data set for Likely, -1 standard deviation for Least, and +1 standard deviation for Most. The average can be influenced by outliers in the data set.
Sum	Total the sizes from the selected data set and uses that value for Least, Likely, and Most.
Help	Brings up this help page.
Apply	Exit the dialog box, applying size based on your selections.
Cancel	Exit the dialog box without making any changes.

Project List

The project list includes all of the projects in your system's current SEER Historical Database. You can use the checkboxes to select projects to be used in sizing.

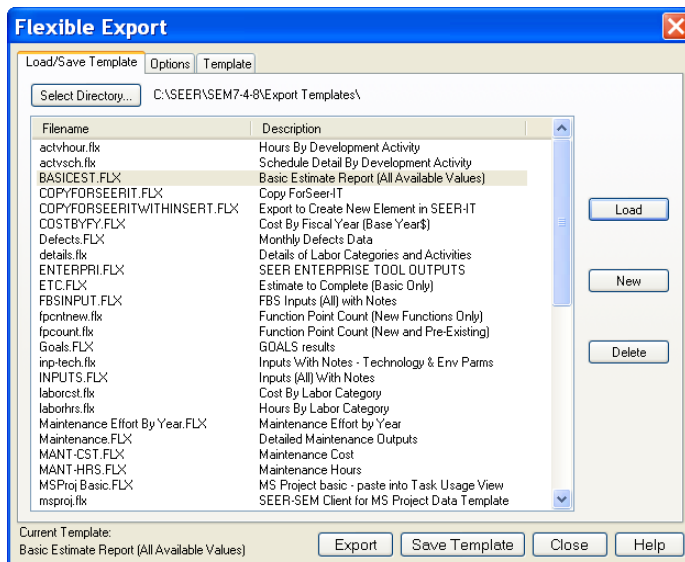| Item	Description
checkboxes	To select a project, click on the checkbox to the left of the project's name. To select all projects, click on the checkbox in the column header row. SEER-SEM will use all selected projects in sizing.
Element Name	The name of the work element.
Project Name	The name of the project which includes the work element.
Description	The description of the work element.
Language	The work element's programming language (Function Implementation Mechanism).
SLOC/UFP	The size of the work element in source lines of code or unadjusted function points.
Effort	The effort associated with the work element, in months.
Schedule	The work element's schedule duration, in months.

Flexible Export

The flexible Export dialog box has been resized and enhanced to make it easier to create the templates and export data.

One key change to flexible export is that you do not need to close the flexible export dialog to change WBS elements, parameters or make estimate adjustments.   This makes it easy to export data for different WBS elements or allows you to make estimate changes between data exports.

Load / Save Template Tab

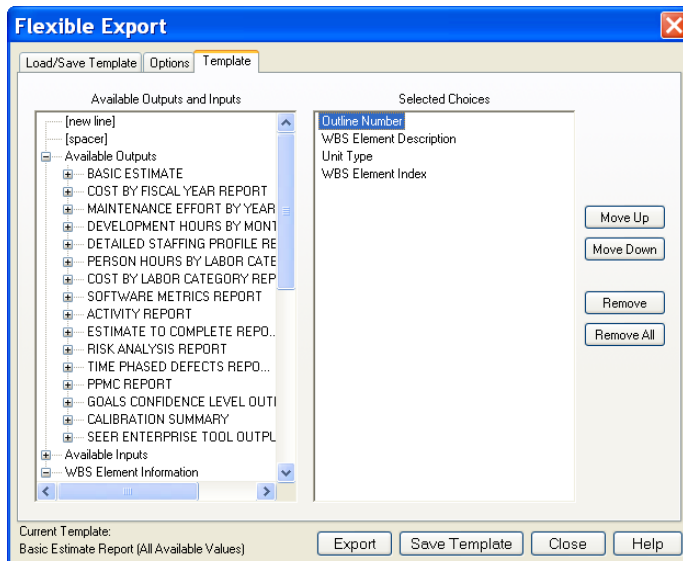| Item	Description
Select Directory	Lets you select the Flex-Ex template directory. The default is the Export Templates subdirectory of the SEER-SEM documents directory.
Load	Selected template is loaded, and appears under "Current Template."
New	Creates a new template, prompts the user for a name and description.
Delete	Deletes currently selected template.
Export	Exports data using the current settings.
Save Template	Saves the current settings as a template. The user is asked to confirm the name of the template to be saved.

Load/Save Template Tab

Options Tab

The functionality of the options tab is identical to the previous versions.

Template Tab

Available Outputs and Inputs are now organized by category in a collapsible tree structure. Items can be selected for export by double clicking them, or by clicking and dragging the desired item to the Selected Choices list box. When you double click, or click and drag a category, its subordinate items are also moved.

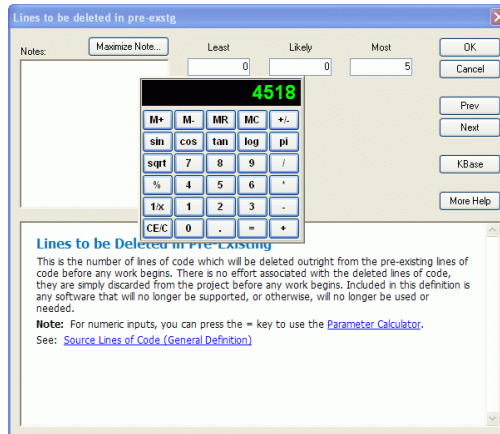| Item	Description
Move Up/Move Down	Reorders the Selected Choice parameters.
Remove	Removes the selected parameter from the Selected Choice list.
Remove All	Removes all parameters from the Selected Choice list.
Export	Exports data using the current settings.
Save Template	Saves the current settings as a template. The user is asked to confirm the name of the template to be saved.

Template Tab

Note: The Copy Special option is a shortcut to the Flexible Export Template tab.

For a list of new items available for flexible export, see New Export Options

Parameter Linked Calculator

A new parameter linked calculator has been added. To bring up the calculator, select a numerical parameter and then press the "=" key on your key board. Use the keyboard or the mouse to operate the calculator. When you've finished your calculation, press the Enter key or "=" key to close the calculator and have the value directly entered into the currently selected parameter.

Parameter Linked Calculator

Graphical User Interface Updates

SEER for Software or SEER-SEM 8.0 release has many new interface updates, including new tree controls for WBS elements, parameters, and flexible export. A few of the major highlights include:

Tree Control

The WBS structure now has an improved tree control. This lets you collapse and expand work elements by clicking the +/- boxes next to the rollup elements.
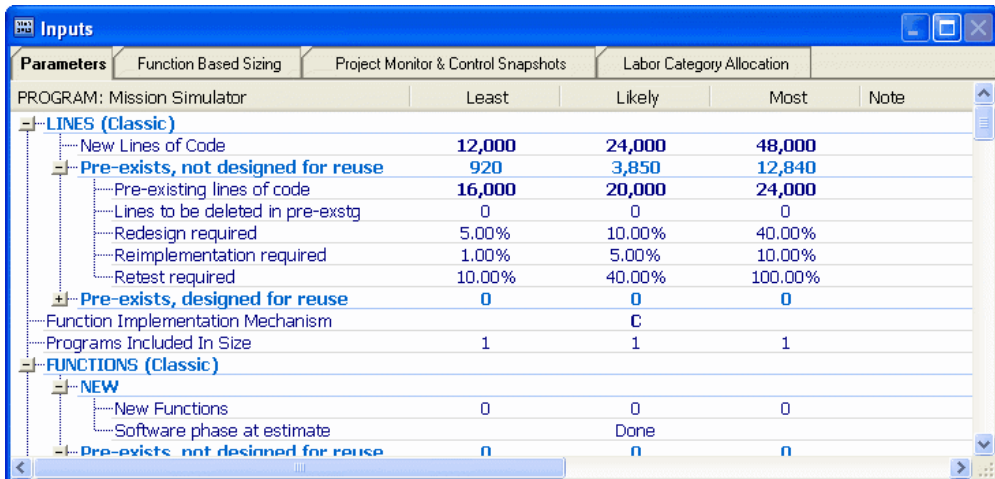

Work Element Tree Control

The tree controls can also be found in other areas of SEER-SEM such as the Inputs window. They automatically display the parameter notes. Resizable column headers are included.

Tabbed Windows

The updated SEER-SEM interface combines Parameters, Function Based Sizing, PMC Snapshots (Project Manager and Studio edition only), and Labor Category Allocation (see below) in a single tabbed window called Inputs. The Reports and Charts windows now have tabs as well.
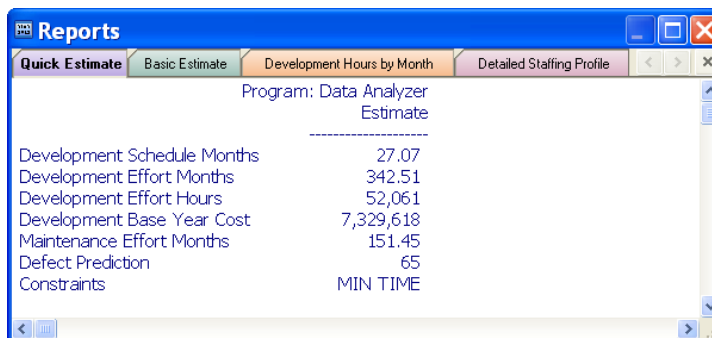

Inputs Window

Multi-Color Tabs

You can use the new View / Multi-color Tabs option to display tabs in both the Reports and Charts windows in distinctive colors.

Reports Window with Multi-color Tabs

Open in New Window

You can also open a copy of a report or chart in a freestanding, fully resizable window by selecting Open in New Window from the right-click menu of the tab for that report or chart. You may open a maximum of ten reports and ten charts in separate windows at once.

The pull-out report or chart windows can be placed anywhere on your display and do not need to stay within the boundaries of the SEER-SEM program window.

Copy to Window - Labor Category Allocation chart

Edit / Find

Edit / Find Dialog Box

Edit / Find brings up a standard Windows Find dialog box. Enter all or part of a word or phrase. You can search up or down, and optionally look for matching text by whole word or case only.

Edit / Find will look for matching text in the Project WBS or Input windows, depending on which one is selected. In the Project WBS window, it will look for work element and rollup names. In the Input window, it will search input and category names in the currently-selected tab.

Note: Find will not look for matches in user input text; it will only look for matches in parameter and work element names. For example, if you search for "Implementation" in the Parameter tab, it

will find the Function Implementation Mechanism parameter, but if you look for "Generation," it will not find the 3rd Generation Languages selection.

Updated Create/Modify WBS Element Dialog Box

Create/Modify WBS Element Dialog Box

The create/Modify WBS Element dialog box has been redesigned and updated. It includes a link to the Project Assistant, a guidance pane with context-sensitive HTML help, enhanced, icon-based selection for element type and indentation level, start date selection, and improved sizing method selection.

Toolbar

The toolbar has been resized and enhanced, making it easier to navigate to commonly used features and functions. The updated toolbar includes icons for the Project Assistant (described above) the Exclude Element from Rollup/Totals feature (described under Program Enhancements).

New Toolbar

Maintenance Model Update

The Maintenance Model for SEER-SEM 8.0 includes the following updates and enhancements:

Partial Years

You can now estimate software maintenance in partial years.

Years of Maintenance Parameter with partial year

Individual Maintenance Phases

It is now possible to choose which maintenance phase to include in a maintenance estimate. Under the SOFTWARE MAINTENANCE parameters, the four maintenance phases are listed with corresponding YES/NO entries. To omit a phase from the estimate, change the YES to NO.

Parameter View – New Maintenance Parameters

Steady State Maintenance

In previous versions of SEER-SEM, Steady State Maintenance Only was calculated by using a steady staff level. SEER-SEM now uses a steady effort level, as well as a steady staff level, to truly reflect a steady state (after bug fixes and environment changes).

Maintenance Size

The Maintenance parameter *Maintain Total System* has been changed to *Maintenance Size*. The maintenance size parameter has 3 options:

Rating	Description
New Size	All new size from lines, functions or other size metrics used.
Total Size	All size from both new and existing lines, functions or other size metrics used.
Effective Size	Only effective size based on new size plus rework of existing size.

Maintenance Calibration

It is now possible to apply maintenance calibration factors to the individual phases. Entries can be made at the top level parent parameter Calibration Maintenance Adjustments, under Adjustment Factors, or the lower level parameters.

Calibration Maintenance Adjustment parameter

Each calibration adjustment is a multiplier to its respected maintenance activity. These adjustment factors can also be used to set custom calibrated knowledge bases.

Project Parameters

To access an old project file created in an earlier version of SEER-SEM (7.3 or earlier) without applying the maintenance model changes, click on SEM 7.3 (or earlier) Compatibility under the Maintenance heading in the Project Parameters dialog box.

Project Parameters dialog box

Note: If the box is checked:

- Partial years will not be enabled.
- Individual maintenance phases will not be enabled.
- Maturity line factors will not be enabled.
- Steady State maintenance will be calculated like previous versions.
- New Size under the Maintenance Size parameter will take default value of Total Size.

Maturity Levels

A new set of complementary parameters have been added to enhance the maintenance model. The Maturity Levels, which can be found under the Software Code Metrics section in the parameter window, are used to estimate Latent Defects. These defects can be considered dormant defects unknown upon arrival. The factors are used to gauge the maturity of the software code ranging from newly delivered/developed to defect free.

Maturity Factor Parameters

Maintenance Chart Updates

Maintenance by Fiscal Year

The Maintenance by Fiscal Year Chart is a bar chart with a toggle that allows you to switch between Maintenance Effort by Fiscal Year and Maintenance Staff Level by Fiscal Year.

Maintenance Effort by Fiscal Year breaks down maintenance activities on a per year basis. The chart is a representation of the Maintenance Effort by Year report.

Maintenance by Fiscal Year (Effort) Chart

Maintenance Staff Level by Fiscal Year breaks down staff levels on a per year basis.

Maintenance by Fiscal Year (Staff Level) Chart

Annual Expenditure

The Annual Expenditure chart is a bar chart which breaks down the annual cost of development and maintenance on a per year basis.

Annual Expenditure Chart

Maintenance Allocation

The Maintenance Allocation chart is a pie chart which breaks out the total maintenance effort by maintenance activity.

Maintenance Allocation Chart

Labor Categories and Allocation

Default Labor Categories

The default set of SEER-SEM labor categories have been revamped to better reflect roles and disciplines used for a wide range of software development projects.

Parameters	Function Based Sizing	Project Monitor & Control Snapshots	Labor Category Allocation			
PROGRAM: Data Analyzer			Least	Likely	Most	Note
ECONOMIC FACTORS						
Cost Input Base Year				2010		
Purchased Items				0		
AVERAGE MONTHLY LABOR RATE				**22,000**		
Project Manager Monthly Labor Rate				22,000		
Software/Business Analyst Monthly Labor Rate				22,000		
Software Architect/Designer Monthly Labor Rate				22,000		
Programmer Monthly Labor Rate				22,000		
Data Analyst/Architect Monthly Labor Rate				22,000		
Quality Assurance/Tester Monthly Labor Rate				22,000		
Configuration/Release Manager Monthly Labor Rate				22,000		
Quality Control Lead Monthly Labor Rate				22,000		

Default Labor Categories

If you prefer to use the legacy labor designations, you can do so by selecting them in the project parameters.

Select Labor Category Naming Scheme Dialog Box

Inputs Window Labor Category Allocation Tab

In previous versions of SEER-SEM, changing labor category allocations required editing a table in the SEER-SEM SETTINGS.INI file to adjust the necessary factors. Modifications made to this table applied to all projects and programs.

In SEER-SEM 8.0, it is now possible to set labor category allocations at the program level, in the same way that you would enter parameter inputs. This eliminates the inconvenience of having to

alter the .INI file, and also allows for greater flexibility in allocating labor categories to activities. In addition, the values will be stored as parameters, allowing them to be saved in Knowledge Bases.

The redesigned Inputs window includes a Labor Category Allocation tab with a full set of labor category allocation inputs. This makes it possible to customize effort and cost allocation of the labor categories. Double clicking an activity row brings up a dialog box with percentage-value inputs for each labor category.

LABOR ALLOCATION BY ACTIVITY	Proj Mgr	Analyst	Design	Program	Data	Test/QA	CM/RM	QC Lead
System Requirements Design Labor Allocation	12.00%	52.00%	14.00%	0.00%	6.00%	12.00%	2.00%	2.00%
S/W Requirements Analysis Labor Allocation	12.00%	46.00%	14.00%	6.00%	6.00%	12.00%	2.00%	2.00%
Preliminary Design Labor Allocation	11.00%	10.00%	41.00%	12.00%	8.00%	14.00%	2.00%	2.00%
Detailed Design Labor Allocation	11.00%	10.00%	41.00%	12.00%	8.00%	14.00%	2.00%	2.00%
Code & Unit Test Labor Allocation	7.00%	3.00%	6.00%	55.00%	6.00%	15.00%	4.00%	4.00%
Component Integrate & Test Labor Allocation	8.00%	2.00%	4.00%	39.00%	8.00%	29.00%	5.00%	5.00%
Program Test Labor Allocation	8.00%	2.00%	4.00%	39.00%	8.00%	29.00%	5.00%	5.00%
System Integrate Thru OT&E Labor Allocation	8.00%	2.00%	4.00%	19.00%	1.00%	59.00%	5.00%	2.00%
Maintenance Labor Allocation	8.00%	2.00%	4.00%	38.00%	1.00%	40.00%	5.00%	2.00%

Inputs Window – Labor Category Allocation

The allocation for all labor categories must add up to a total of 100, representing 100% of the activity being allocated. If they do not add up to 100, the program will warn you, and ask you to either adjust the values, or to click on the Normalize button in the input dialog box in order to adjust them automatically so that they total 100.

Example of Labor Category Allocation Input Dialog Box

Labor Category Allocation Report

A new Labor Category Allocation report has been added. This report is available only at the rollup/project level and can be activated from the reports menu.

Activity	Proj Mgr	Analyst	Design	Program	Data	Test/QA	CM/RM	QC Lead
System Requirements Design	12.00%	52.00%	14.00%	0.00%	6.00%	12.00%	2.00%	2.00%
S/W Requirements Analysis	12.00%	46.00%	14.00%	6.00%	6.00%	12.00%	2.00%	2.00%
Preliminary Design	11.00%	10.00%	41.00%	12.00%	8.00%	14.00%	2.00%	2.00%
Detailed Design	11.00%	10.00%	41.00%	12.00%	8.00%	14.00%	2.00%	2.00%
Code & Unit Test	7.00%	3.00%	6.00%	55.00%	6.00%	15.00%	4.00%	4.00%
Component Integrate & Test	8.00%	2.00%	4.00%	39.00%	8.00%	29.00%	5.00%	5.00%
Program Test	8.00%	2.00%	4.00%	39.00%	8.00%	29.00%	5.00%	5.00%
System Integrate Thru OT&E	8.00%	2.00%	4.00%	19.00%	1.00%	59.00%	5.00%	2.00%
Maintenance	8.00%	2.00%	4.00%	38.00%	1.00%	40.00%	5.00%	2.00%
% of Total Effort	8.99%	6.72%	18.20%	30.90%	6.39%	22.07%	3.58%	3.11%
% of Total Cost	9.13%	7.39%	20.19%	29.90%	7.14%	19.55%	3.38%	3.27%

Labor Category Allocation Report

The report includes the Percent of Total Effort and Percent of Total Cost. These values also appear in the Labor Category Allocation pie chart (shown below), which can display hours or cost.

Labor Category Allocation Chart (cost)

Minimum Staff Scheduling Option

The Minimum Staff or "MIN STAFF" is a new scheduling option available in SEER-SEM 8.0. Prior to this release, with a project of small size, (1000-2000 lines of code or less, 50 function points or less); the estimated schedule would be often overstated, causing an average staff of less than one FTE.   With the minimum staff feature (also known as "small schedule"), SEER-SEM computes the schedule based on the assumption that there will be a minimum average staff of at least one person on the project.   For very small size projects, you will see shorter schedules when Minimum Staff is enabled.

Project Parameters Dialog Box

To turn the minimum staff feature on or off, check the Assume Minimum Staff box under Schedule Options in the Project Parameters dialog box. To maintain backwards compatibility, this option will be turned off by default for projects created in SEER-SEM 7.3 or earlier.

Project Parameters Dialog box

Note: Use Extended Schedule Adjustment must be checked in order to activate Minimum Staff.

Quick Estimate

If your estimate falls into the small schedule range, this will be indicated in your Quick Estimate report with a MIN STAFF constraint.

Quick Estimate Report

Program Enhancements

Single Project Files

Saved project and scenarios files are now stored in a single project file. There are no more .cdx, .dbf, and .fpt files. A .prl file is still generated for linking.

Saving Notes with Project Files

A new option in the Save As Dialog box has been added to include or exclude saving notes. This is to support the new compressed project file feature. In the past the .cdx, .dbf, and .fpt files were generated for notes, and to exclude notes from a saved project, you could delete those files. To exclude saving notes with the compressed project file, you may uncheck the option "Include notes in SEER file" when you save your project.

Save as Dialog box

Views Enhancements

When you select a View for display, by default it will now occupy the space usually taken up by the Inputs, Reports, and Charts windows. You can still resize a View.

New Default Views Display

- The Views menu now includes a Delete View command; it will delete the view that is currently selected in the Views selector.
- Server Mode now includes commands to display and close a view.
- SEER-SEM now stores the Views / Views Active setting in SEER-SEM Settings.ini.

Knowledge Base Updates

New and Updated Platform Knowledge Bases

Cost Input Base Year

All Platform knowledge bases have been updated with the Cost Input Base Year set to 2010.

Cost Input Base Year

Labor Rates have been updated to base year 2010. Current default rates (per effort month) are:

Monthly Labor Rate	Platforms
$22,000	Ground, Mobile, or Sea Based Mission Critical Systems
$17,600	Business Systems, Enterprise Client-Server Systems
$25,100	Avionics, Missiles, & Unmanned Air
$29,100	Space Systems

Web Based Development

(INTERNET.plt) – Renamed from Internet Development. Software that is accessed through a web browser over the internet or an intranet using web service transport mechanisms and protocols. This knowledge base is appropriate for the development of web-based or browser-based applications.

New Application Knowledge Bases

Business Intelligence

(ExecutiveInformationSystem.app) – Specialized information system for top executives to provide information and decision support related to executive level performance monitoring and strategic decision making.   Examples include dashboards showing key metrics with drilldown capability.

Catalog/Inventory Management

(CatalogueInventoryManagment.app) – Software used to track sales and available inventory as well as interface with suppliers, all with the objective of maintaining optimal inventory levels.

Customer Relationship Management

(CustomerRelationshipManagement.app) – Software used to support the tracking and interaction with customers and prospective customers. The software maybe used to aid in organizing, automating, and synchronizing business processes. Typically in sales but can also be used for marketing, customer service, and technical support related activities.

Decision Support System

(DecisionSupportSystem.app) – A specialized information system used to support business decision making, usually at the tactical or mid-management level.   These systems feature the ability to access to data such as sales and inventory figures combined with business rules or a model to evaluate such data, as well as a presentation layer or user interface to present information.

Document Management

(DocumentManagement.app) – An application used to track and store electronic documents.

Electronic Data Interchange

(ElectronicDataInterchange.app) – An application specializing in the structured transmission of business data or documents between companies or organizations by electronic means without human intervention.

Voice Provisioning

(VoiceProvisioning.app) – An application specializing in providing clients with access to voice communications by providing accounts and appropriate access, unifying the common elements of end-user operations and management of call systems.

Workflow

(Workflow.app) – An application that aids in the automation of and adherence to a process. Some steps in the workflow process may require human intervention, such as approvals, but leaving as much of the automated process to be handled by the application.

New Acquisition Method Knowledge Bases

Acquisition Method Kbases that begin with an underscore (_) are used to model parts of the overall software development lifecycle. Size should be entered in the category used for Partial Life Cycle or Existing code. These knowledge bases will determine the appropriate equivalent size as well as special calibration factors needed to estimate the desired portion of the life cycle.

_(High Level Design thru Test Only)

(_Des thru Tst Only.end) – This knowledge base will estimate the effort and schedule for preliminary design though program test.

_(Requirements Only)

(_Req Only.end) – This knowledge base can be used to estimate only the requirements effort and corresponding schedule.

_(System Test Only)

(_System Test Only.end) – This knowledge base can be used to estimate only the System Integration and Test effort and corresponding schedule.

Maintenance, Full Effort for Mature System

(maintful.end) – This knowledge base can be used for maintenance-only estimates for software that is considered mature or operational for 5 years or more. Size should be entered as pre-existing source lines of code or as pre-existing functions. All maintenance activities are included (corrective, adaptive, perfective and enhancements) however, the corrective maintenance level will reflect the maturity of the system. This knowledge base replaces Maintenance Complete.

Maintenance, Sustaining Mature System

(maintmin.end) – This knowledge base can be used for maintenance-only estimates for software that is newly deployed or operational for fewer than 3 years. Size should be entered as pre-existing source lines of code or as pre-existing functions. All maintenance activities are included (corrective, adaptive, perfective and enhancements) and the corrective maintenance level will reflect the maturity of the system. This knowledge base replaces Maintenance, Sustaining (MainMin.end).

Maintenance, Full Effort for New System

(maintfulNewSys.end) – This knowledge base can be used for maintenance-only estimates for software that is newly deployed or operational for fewer than 3 years. Size should be entered as pre-existing source lines of code or as pre-existing functions. All maintenance activities are included (corrective, adaptive, perfective and enhancements) and the corrective maintenance level will reflect the maturity of the system.

Maintenance, Sustaining New System

(maintminNewSys.end) – This knowledge base can be used for estimating essential corrective and adaptive maintenance (modifications and additions) or software that is newly deployed or operational for fewer than 3 years. Size should be entered as pre-existing source lines of code or as pre-existing functions.

Model Based Development

(mbd.end) – This knowledge base should be used for code that is developed using the model based development tools and if you are using source lines of code as a sizing metric. New size should be entered under pre-exists, designed for reuse parameter. The rework parameters will calculate an equivalent effective size that is calibrated to this type of development.

Quick Estimate Report

The Quick Estimate report has been updated to include proxy size. The following outputs are affected: Total Lines Only, Total Functions Only, Effective Lines Only, Effective Functions Only, Productivity Lines/Person Month, and Productivity Functions/Person Month.

Software Metrics Report

Software Metrics report has been updated to include proxy size. The Software Metrics report now displays Latent Defects and Delivered Defects (if SEM 7.3 compatibility is *not* checked in the Project Parameters dialog box).

Risk-Adjusted Metrics Report

A new Risk-Adjusted Metrics report has been added. The report displays Risk Adjusted Effective Size, Risk Adjusted Effective Technology, and Risk Adjusted Productivity by confidence level. The Risk-Adjusted Metrics report can be activated in the Reports menu or by right clicking on any open report.

Risk-Adjusted Metrics Report

In addition to the new Risk-Adjusted Metrics report, Risk Adjusted Effective Size and Technology are available in Flexible Export as Available Outputs. Please see Flexible Export for more details.

System Integration Parameters

A new parameter called "Software Integration Level" has been added. In addition, the Programs Concurrently Integrating parameter will now have a least, likely and most entry available as opposed to a single entry.

Parameter Tab – System Integration

SEER-SEM Help

The SEER-SEM online help system has been converted to HTML format. When you select a Help option in SEER-SEM, it will now appear in Internet Explorer; the Help system includes a navigation pane (Table of Contents, Index, and Search) to the left of the main Help display pane.

Help content in parameter dialog boxes will now use the HTML format as well.

Calibration Factors

Calibration Effort Adjustment and Calibration Schedule Adjustment have been expanded, and there is a new Calibration Defects Adjustment.

PROGRAM: Braintree Encryption	Least	Likely	Most
ADJUSTMENT FACTORS			
FBS Application Adjustment Factor		1.00	
FBS Platform Adjustment Factor		0.92	
Calibration Effort Adjustment		**1.00**	
Requirements Before Design Effort Adjustment		1.00	
Requirements After Design Effort Adjustment		1.00	
Design Thru Program Test Effort Adjustment		1.00	
System Integrate Thru OT&E Effort Adjustm...		1.00	
Calibration Schedule Adjustment		**1.00**	
Requirements Schedule Adjustment		1.00	
Design Thru Program Test Schedule Adjust...		1.00	
System Integrate Thru OT&E Schedule Adju...		1.00	
Calibration Defects Adjustment		1.00	
Calibration Technology Adjustment		1.00	
Calibration Complexity Adjustment		1.00	
Calibration Maintenance Adjustment		**1.00**	

Calibration Adjustment Factors

Calibration Effort Adjustment and Calibration Schedule Adjustment

In SEER-SEM, there are three main phases that are accounted for in software development: Requirements, Design and System Integration. In the previous versions of SEER-SEM, when users applied calibration factors, all three phases were calibrated at the same time. Now, users will be able to apply a calibration factor on each individual phase of the software development process.

Calibration Effort Adjustment parameters:

Requirements Before Design Effort Adjustment

Requirements After Design Effort Adjustment

Design Thru Program Test Effort Adjustment

System Integrate Thru OT&E Effort Adjustment

Calibration Schedule Adjustment parameters:

Requirements Schedule Adjustment

Design Thru Program Test Schedule Adjustment

System Integrate Thru OT&E Schedule Adjustment

Calibration Defects Adjustment

The Calibration Defects Adjustment is calibration adjustment for actual Defects. This adjustment is a multiplier for total defects, and can be set by creating a custom, calibrated knowledge base.

Exclude WBS Element from Rollups/Totals

A new feature has been added to allow you to select WBS element to be included or excluded from the rollup/project calculations. This can be found under Estimate menu, right clicking on the WBS element or by accessing it from the SEER-SEM toolbar.

Exclude WBS Element from Rollups/Totals Toolbar Icon

Object Sizing Input Names

The names of the Input Services, Output Services, and Inquiry Services inputs have been changed to Input Methods, Output Methods, and Inquiry Methods, respectively. This change affects both the COTS Object Sizing parameters and the inputs for the Detailed Object Sizing proxy.

Proxy Names

The names of several proxy sets have been updated:

Previous Name	New Name
Mark II Function Points	Mark II Function Point Analysis
Metric - Fast Function Points	Fast Function Points
Metric - Function Based Sizing	Function Based Sizing
Metric - Source Lines of Code	Source Lines of Code
Metric - Unadj Function Points	Unadjusted Function Points
OO Metric - Use Cases	Use Cases
Trigger and Procedures	Triggers and Procedures

Launching SEER Metrics From Choose Available Charts

You can now launch SEER Metrics from the Choose Available Charts dialog box.

Choose Available Charts Dialog Box with SEER Metrics Selected

Select the SEER Metrics checkbox, then click on the OK button. SEER Metrics will open.

Server Mode Command Updates

The following Server Mode commands are new with SEER-SEM 8.0:

MinimumStaff

Maintain backwards compatibility for the Small Schedule feature. If the project used Small Schedule Staffing (for small projects, with 1,000 to 2,000 lines of code or less), then set this value to Yes. For projects created before the introduction of Small Schedule Staffing (before version 8.0), set this value to NO.

Format

```
MinimumStaff    <YES/NO>
```

Example

```
MinimumStaff    YES
```

Maint7_3Compatible

Maintain backwards compatibility for the Maintenance Model update. If the project used the Maintenance Model updates introduced with after version 7.3, then set this value to Yes. For projects created with version 7.3 or earlier, set this value to NO.

Format

```
Maint7_3Compatible    <YES/NO>
```

Example

```
Maint7_3Compatible    NO
```

ElementIncluded

This command can be used to exclude a work element from rollup totals. In the WBS window, such elements are crossed out in red. The ElementIncluded command is placed after the WBSCreate command which makes it relevant to that work element.

If the ElementIncluded command is not used, SEER-SEM assumes ElementIncluded = YES. When using export commands, the ElementIncluded command is automatically exported indicating the state of each element within the project.

Format

```
ElementIncluded                 <YES/NO>
```

Example

```
WBSCreate      Data Analyzer    Program                         1
ElementIncluded      YES
WBSCreate      Mission Simulator Program                        1
ElementIncluded      NO
```

Maturity Level – (Lines/Functions/Proxy NDR or DR)

This command can be used to enter a specific maturity level parameter.

Format

```
Maturity Level – (Lines/Functions/Proxy NDR/DR)    LEAST/LIKELY/MOST
```

Example

```
Maturity Level – Lines not designed for reuse      Nom   Nom   Nom
```

Software Integration Level

This command is used to enter the Software Integration Level parameter.

Format

```
Software Integration Level LEAST/LIKELY/MOST
```

Example

```
Software Integration Level Low   Nom    Nom
```

Show View

Displays the view indicated by the Name argument.

Format

```
Show View      Name
```

Example

```
Show View      Basic Size Inputs
```

Close View

Closes the view indicated by the Name argument.

Format

```
Close View     Name
```

Example

```
Close View     Basic Size Inputs
```

New Flexible Export Options

Flexible Export includes the following new export options.

New Available Inputs

SYSTEM INTEGRATION (See also: Program Enhancements)

Includes the following new input:

Software Integration Level

SOFTWARE MAINTENANCE (See also: Maintenance Model Update)

Includes the following new inputs:

Maintenance Size – Determines the size of the maintenance estimate.

Corrective – Include Corrective effort in maintenance estimate.
Adaptive – Include Adaptive effort in maintenance estimate.
Perfective – Include Perfective effort in maintenance estimate.
Enhancements – Include Enhancements effort in maintenance effort.

ADJUSTMENT FACTORS (See also: Program Enhancements)

Includes the following new input:

Calibration Defects Adjustment

Includes the new Calibration Effort Adjustment subcategory, with the following inputs:

Requirements Before Design Effort Adjustment
Requirements After Design Effort Adjustment
Design Thru Program Test Effort Adjustment
System Integrate Thru OT&E Adjustment

Includes the new Calibration Schedule Adjustment subcategory, with the following inputs:

Requirements Schedule Adjustment
Design Thru Program Test Schedule Adjustment
System Integrate Thru OT&E Schedule Adjustment

Includes the new Calibration Maintenance Adjustment subcategory (See also: Maintenance Model Update), with the following calibration factor inputs for each individual maintenance phase:

Corrective Effort Adjustment
Adaptive Effort Adjustment
Perfective Effort Adjustment
Enhancements Effort Adjustment

SOFTWARE CODE METRICS (Optional) (See also: Program Enhancements)

Includes the new Existing Code Maturity Level subcategory, with the following, inputs, used in calculation of latent defects for maintenance estimates:

Maturity Level - Lines not designed for reuse
Maturity Level - Lines designed for reuse
Maturity Level - Functions not designed for reuse
Maturity Level - Functions designed for reuse
Maturity Level - Proxy not designed for reuse
Maturity Level - Proxy designed for reuse

LABOR ALLOCATION BY ACTIVITY (See also: Labor Category Allocation)

The new LABOR ALLOCATION BY ACTIVITY input category includes the following inputs:

System Requirements Labor Allocation
S/W Requirements Analysis Labor Allocation
Preliminary Design Labor Allocation
Detailed Design Labor Allocation

Code & Unit Test Labor Allocation
Component Integrate & Test Labor Allocation
Program Test Labor Allocation
System Integrate Thru OT&E Labor Allocation
Maintenance Labor Allocation

New Available Outputs

BASIC ESTIMATE REPORT

The Basic Estimate Report includes the following new outputs:

Effort Risk Adj Effective Size
Effort Risk Adj Risk Effective Technology

RISK ANALYSIS REPORT

The Risk Analysis Report includes the following new outputs (See also: Risk Adjusted Metrics Report):

Risk Effective Size – Effective Size based on current confidence level
Risk Effective Technology – Effective Technology based on current confidence level.

MONTE CARLO ANALYSIS

The new MONTE CARLO ANALYSIS output category includes the following outputs:

Risk Confidence Level
Risk Independent Cost
Risk Dependent Cost
Risk Independent Schedule
Risk Dependent Schedule

The new MONTE CARLO MEANS AND STDDEVS output subcategory (under MONTE CARLO ANALYSIS), includes the following outputs:

Risk Independent Mean Cost
Risk Independent StdDev
Risk Dependent Mean Cost
Risk Dependent StdDev
Risk Independent Mean Schedule
Risk Independent StdDev Schedule
Risk Dependent Mean Schedule
Risk Dependent StdDev Schedule

WBS Element Information

In SEER-SEM 7.3, WBS element information was listed at the beginning of the Available Inputs, without a category heading. These items are now listed under their own category heading, WBS Element Information, following the Available Inputs. WBS Element Information includes the following new items:

> Output Level – outputs the currently WBS level in tree.
> ElementIncluded – Indicates whether a work element is included in Rollups/Totals

SEER Metrics Benchmarking & Analysis

Previous versions of SEER Metrics used Graphic Server, but since the last release, SEER Metrics has been rewritten to use Chart FX. Along with the use of Chart FX, the following enhancements to SEER Metrics are:

Color Selection

The drop down list for color selection has been replaced by buttons; users now have a 24-bit palette for selecting colors.

X&Y Properties – Display Target Data

Copy as Text (data only)

The Edit menu has been revamped to be clearer. A Copy as Text (data only) option has been added. For the XY Chart, it will export the data points plotted, and the points of the two variables used to plot the current XY chart.

Miscellaneous Chart Options

With the use of Chart FX the following chart options are available:

X-Axis

- Gridlines
- Interlaced
- Vertical Labels
- Staggered Labels

Y-Axis

- Gridlines
- Interlaced
- Staggered Labels

2D/3D

In Histogram mode, you can switch the view between 2D and 3D.

Pop-ups

New pop-ups have been added, and existing pop-ups now include more details.

Upgrade Information

This release of SEER Metrics uses a different file format. The new file format is .sp3; there is backwards compatibility to support previous file formats (.sp2). New files and older files opened and saved from the current version will have the .sp3 extension.

Updated Installation Options

SEER-SEM 8.0 has been updated to run more effectively on Windows XP, Windows Vista, and Windows 7 operating systems, and within Terminal Server environments.

During installation, a set of Document and Application Data files are installed in the chosen installation directory.

When a user first runs SEER, SEER begins a first time initialization process and creates a User specific SEER profile. As a minimum, the SEER profile will contain the SEER-SEM Settings.INI file. This file allows each user to customize SEER with specific preferences i.e. font colors, font sizes, default reports etc. The SEER User profile may also contain other SEER related documents and files; however, this typically depends on the type of install chosen.

Local Installations

In a typical SEER-SEM "local" installation (where all of the files are installed on the user's system, and not on a network server), files are installed in the following locations:

Application Files

Application files include the main SEER-SEM program, along with associated DLL, Help, and other supporting files.

Windows 7 / Vista / XP

```
C:\Program Files\SEER\SEER-SEM 8.0\
```

Application Data

Application data files include .INI files, which control basic program settings. Typically, you would not open or edit these files directly, since they are maintained and updated by SEER-SEM when you make changes within the program. Application data files are stored in the following locations:

Windows 7 / Vista

```
\Users\[USER NAME]\AppData\SEER\SEER-SEM 8.0\
```

Windows XP

```
\Documents and Settings\[USER NAME]\Local Settings\Application
Data\SEER\SEER-SEM 8.0\
```

Document Files

Document files include these directories:

Directory	Description
Export Templates	Default location for flexible export templates.
KBases	The SEER-SEM knowledge base and proxy files.
Projects	Default location for your project files, along with sample project files.
Scenarios	Default SEER-SEM scenario directory.
Tools	The SEER-SEM manual supplement (which includes a detailed description of changes to the program since the last upgrade) in PDF format, SEER-SEM Server Mode Details, SEMacros (for creating Excel macros which run SEER-SEM), worksheets, and support documents.

The document file directories are stored in the following locations:

Windows 7

```
\Users\[USER NAME]\My Documents\SEER\SEER-SEM 8.0\
```

Windows Vista

```
\Users\[USER NAME]\Documents\SEER\SEER-SEM 8.0\
```

Windows XP

```
\Documents and Settings\[USER NAME]\My Documents\SEER\SEER-SEM 8.0\
```

Finding Your User Path

On your system the section of the path represented by [USER NAME] will consist of your user name. If, for example, you log in using the name SEM_user_1, the application data files path in Vista or Windows 7 would look like this:

```
\Users\SEM_user_1\AppData\SEER\SEER-SEM 8.0\
```

In Windows XP, it would look like this:

```
\Documents and Settings\SEM_user_1\Local Settings\Application
Data\SEER\SEER-SEM 8.0\
```

Note: The actual SEER-SEM directory name will depend on the version of the program being installed. SEER-SEM version 8.0 will be installed in the SEER-SEM 8.0 directory, and the default installation directories for later versions will be numbered accordingly (SEER-SEM 8.1, SEER-SEM 8.2, etc.).

Server/Client Installations

The default configuration during first time initialization for a Client user, or a user that runs SEER directly from the server, is for SEER <u>not to copy</u> Document and Application Data files to the SEER local user profile.

Instead SEER only copies the SEER-SEM Settings.INI file to the SEER user profile. The SEER-SEM Settings.INI file for client/server users is copied to the <u>Roaming application data</u> location. This insures that clients with roaming profiles will retain their SEER-SEM Settings.INI file as they log onto different servers or computers to run SEER.

The SEER-SEM Settings.INI file will be stored in the following location, depending on the operating system:

Windows 7 / Vista

```
\Users\[USER NAME]\AppData\Roaming\SEER\SEER-SEM 8.0\
```

Windows XP

```
\Documents and Settings\[USER NAME]\Application Data\SEER\SEER-SEM
8.0\
```

See Finding Your User Path, above, for more information on user file locations.

Shared Application Data and Document Files

Also by default, <u>all</u> Client users share the set of Application Data and Document files installed on the server. Since some of the document files require write privileges, the person responsible for installing SEER on the server is advised to either,

- Provide Clients with write access to the Documents and/or AppData folder, or
- Save copies of the SEER Document and AppData files to a shared network location, and configure the [PATHS] section of the SEER-SEM Settings.INI file <u>before</u> clients run SEER.

Customizing Server Installations

Users running a Server installed version only receive a copy of the SEER-SEM Settings.INI file. No other files are copied to the local user profile. Administrators can change this default option by updating the [FIRST-TIME-INIT-AND-UPGRADES] table in the SEER-SEM Settings.ini file <u>before</u> a client runs the Server installed version.

The above paths are default locations for Document and Application Data Files. Users may choose to set paths and point to other locations from the Options / Set Paths dialog box in SEER-SEM.

Maintenance Updates & Useful Information

Calendar Widget

- Fixed a problem in Quick Planner where a shift in the end date in would shift the start date.
- Regional date formats are now accepted and function correctly in calendar widgets. Calendar widgets can be found throughout SEER-SEM where dates are accepted.

Parameters

ESTABLISH GOALS

The ESTABLISH GOALS parameter category list is now expanded by default.

Maintain Total System

The Maintenance Total System Parameter has been replaced with the new Maintenance Size parameter. SEER-SEM will convert the value based on the following rule:

If Maintain Total System = YES, Maintenance Size = Total Size

If Maintain Total System = NO, Maintenance Size = Effective Size

Modern Development Practices Use

The Modern Development Practices Use parameter under category Development Support Environment has been renamed to Development Practices Use.

Recalculation

Automatic recalculation is now permanently turned on for Program, Component, Unit, and COTS work elements. At the Project/Rollup level, it may still be necessary at times to use the F9 key to force a recalculation.

Reports and Charts

Labor Category Reports

The Person Months by Labor Category and Person Hours by Labor Category reports layouts have been updated to be in a continuous report. The Activities are no longer split up and can be viewed using the horizontal scroll.

Maintenance Effort by Year Report

The Maintenance Effort by Year report now displays the Total for the Corrective, Adaptive, Perfective, and Enhancements Efforts.

Project/Rollup Risk Reports

Project/Rollup Schedule Risk and Cost Risk reports now include the standard deviation.

Publish Reports/Export Report

Print Preview for Export/Publish reports is now initialized correctly.

Scenarios

Fixed a problem where a parameter query for a numeric input with choices that have a range would only load the likely value.

Schedule

When a user-entered required schedule is longer than the optimal effort schedule, the effort and complexity outputs for Minimum Time and Optimal Effort are now consistent with each other.

Shipping Files

- The SEER-SEM Server Mode Details.xls has been updated to reflect the new server mode commands. Please see Server Mode Commands Updates for more details

- Two sample project files have been added: Illinois Outreach and TaxSystemAccountReporting.

User Interface

Using the Windows Start Menu key when the SEER-SEM window is active no longer brings up the "To change parameters..." message.

Miscellaneous

- Fixed an issue where when Link to MS Project was not working properly with MS Project 2007.
- SEER-SEM no longer tries to re-establish links from a project which had been linked, but not saved.
- SEER-SEM is now able to handle 64-bit time.
- Updated the Cost Escalation Factor to 1.13%, the current BLS factor for the industry.

Maintenance Release 8.0.14

Find

In the Parameters window, the Find feature will now continue to find the next match instead of stopping at the first match.

Help Window Update

HTML help is now opened in an internal help window instead of in Internet Explorer. You no longer have to click the 'Allow ActiveX content' security setting to open the help page. If a new help topic is called, it re-uses the same help window and the help window will appear in the foreground.

Knowledge Bases

The Commercial Low (CMRCL-LO.std) knowledge base has been updated with the correct parameter settings for the Specification – Reliability, Test Level, and Quality Assurance Level parameters.

Project Monitor & Control

- The PMC menu and PMC Snapshots tab have been renamed to Project Monitor & Control.
- New Flexible Export outputs are available. Under the PMC Report section, the MONTHLY ACCOMPLISHMENTS branch includes monthly progress outputs for the Baseline Plan and Current Estimate, and it includes the Time Now snapshot that is currently applied.

- New Chart: The Estimate at Complete chart shows how the Estimate at Complete for the Baseline Plan and Current Estimate changes across the entered snapshots (as of the Time Now selection)
- Similar to deleting a snapshot in the SEER-SEM user interface, a snapshot can be deleted via server mode by entering 0 for the date.
- In the Schedule Accomplishments chart, the chart pop-up value for the Current Estimate's "Actual (spent) %" now correctly displays the percentage against the Current Estimate and not the Baseline Plan.

Printing

In the Print Options dialog box, when a Project/Rollup is selected, checking the option to Include Lower Level WBS Elements will now print the selected reports and charts for subordinate elements in the Project WBS.

Project Assistant

When using the Project Assistant, knowledge base selections are now inherited from the project/rollup element correctly.

Recalculation

Estimates at the program level are now automatically recalculated after a knowledge base has been changed for a lower level element.

Reports and Charts

Report and Chart Menu Selections and Dialog Boxes

The Choose Available Charts and Choose Available Reports menu selections and dialog boxes have been renamed to Choose Active Charts and Choose Active Reports.

Effort/Schedule Trade-Off Chart

Fixed an issue in the chart when a program element has small size while the Minimum Staff Schedule Option is selected and the Productive Hours Per Month setting is greater than 152.

Quick Estimate Report

- Maintenance Effort Months and Maintenance Schedule Months are now included in the Quick Estimate by default.
- Restored tab delimited format when copying the Quick Estimate report to the clipboard.

Scenarios

- In the Scenario Parameter Query, Query Choices dialog box:
  - If a Choose Query has been applied to a parameter with a percentage entry type, selecting a choice will no longer multiply the selection by 100.
  - The Linear Adjustment Option entry will now be applied to the selected choices while the dialog box is still open, allowing you to see the final values that will be entered in the parameter entry dialog box.
- While a scenario is being loaded, the Prev, Next, and KBase buttons have been removed from the parameter entry dialog box.

Schedule

- Fixed some calculation anomalies when both a required schedule and schedule calibration factor were entered.
- Fixed a calculation anomaly that caused estimates to erroneously have schedules adjusted for the minimum staff constraint.   This fix should not impact your estimates unless you had a combination of key settings:
  - Productive Hours Per Person Month is large (usually 180 hours or more)
  - Size is relatively small (usually fewer than 20 UFP or 3000 lines)
  - Productive Hours Per Person Month is applied to hours (the non-default setting)

  In the maintenance release, you will see a slightly longer schedule since it is no longer applying the erroneous adjustment for the minimum staff constraint.   If you also had a Required Schedule input, you will see the estimated effort change as well as the schedule benefit or penalty is now based on the correct schedule.

SEER-SEM Data.INI file

SEER-SEM factors and data previously stored in the SEER-SEM Properties.INI have been moved to a new configuration settings file. The SEER-SEM Data.INI file is a customizable text file that is part of the AppData files. It is used to store data such as languages, COTS component types, COTS application types, PMC terminology, etc.

SEER Metrics

Proxy size (as it translates to lines or functions) is now sent to SEER Metrics.

Server Mode

- The FlexportOutput command can now be used to export individual flexible export items that have a period or double quote in the item's description.
- Using the FlexportOutput command now automatically recalculates the entire project after running a server mode script (MSP Integration issue).

- In Automation Interface mode, exporting a flexible export template containing Category Header Items will now export a blank value for the Category Header instead of concatenating the element name.
- In Automation Interface mode, GetLastCommandStatus now checks the status of commands which involve making Project WBS selections, such as SelectWBSElement. This feature had been accidentally disabled with the introduction version 8.0.

User Interface

- In the Window menu, the Expand and Collapse options have been enabled.
- The column widths in the input tabs are now preserved by WBS element type for the instance of SEER-SEM.
- The Options menu now includes a Select Historical Database option for setting the SEER Historical Database (SEER-HD) DSN. Used by the Analogy Based Estimating and Analogy Based Sizing features.
- In the Collaboration menu, the Default Database and Connect to Default Database selections have been renamed to Default Enterprise Database and Connect to Default Enterprise Database.

Miscellaneous

- SEER-IT Labor Category names are now displayed in the Resource Assignment tab.
- In Change Parameters in Multiple WBS Elements and Load Individual Knowledge Base, elements within collapsed branches are no longer ignored.
- Fixed several issues with the maintenance calculations when there is a constrained maintenance staff applied.

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Project Assistant

The Project Assistant's overall design has been completely updated to make it more intuitive for the user. This includes estimates that are dynamically displayed within the interface based on current information, enhanced onscreen guidance, updated labels and better navigation cues. In addition:
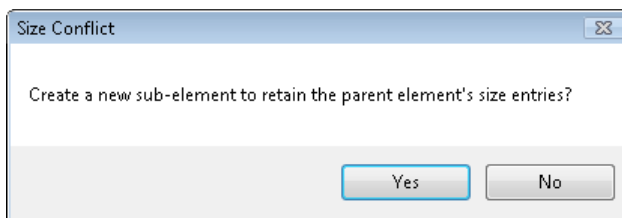
- Sizing options have been recast in a categorized tree control. Both new and pre-existing sizing entries may now be simultaneously made.
- A risk-oriented screen has been introduced with more intuitive controls for specifying requirements volatility and risk tolerance.
- A new staffing approach screen permits you to determine the type of estimate (minimum time versus optimal effort, or constrained staffing), in addition to staffing ramp up.

Project WBS

Drag and Drop

WBS elements can now be dragged and dropped in the Project WBS. Rollup elements that are dragged and dropped will also move their subordinate elements to the new location.

When you move a lower level WBS element (COTS, Component or Unit) to a new parent WBS element, SEER-SEM will ask to create a new sub-element to keep size inputs already entered in the parent WBS element. This is done to help you preserve any size inputs that you have already entered.
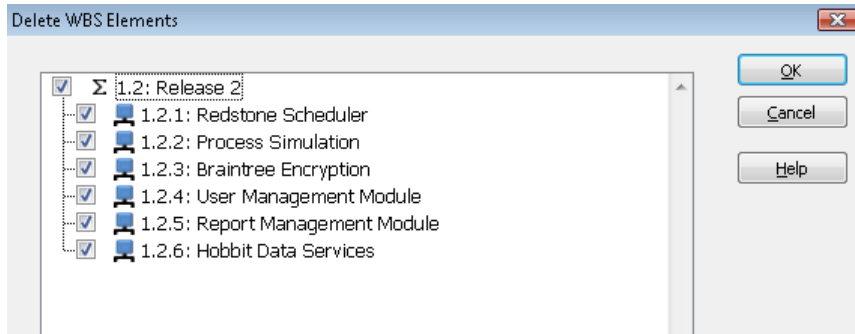

If you choose to create a new sub-element, it will be created containing the size inputs of the original parent element and give the name of the parent in {curly braces}.
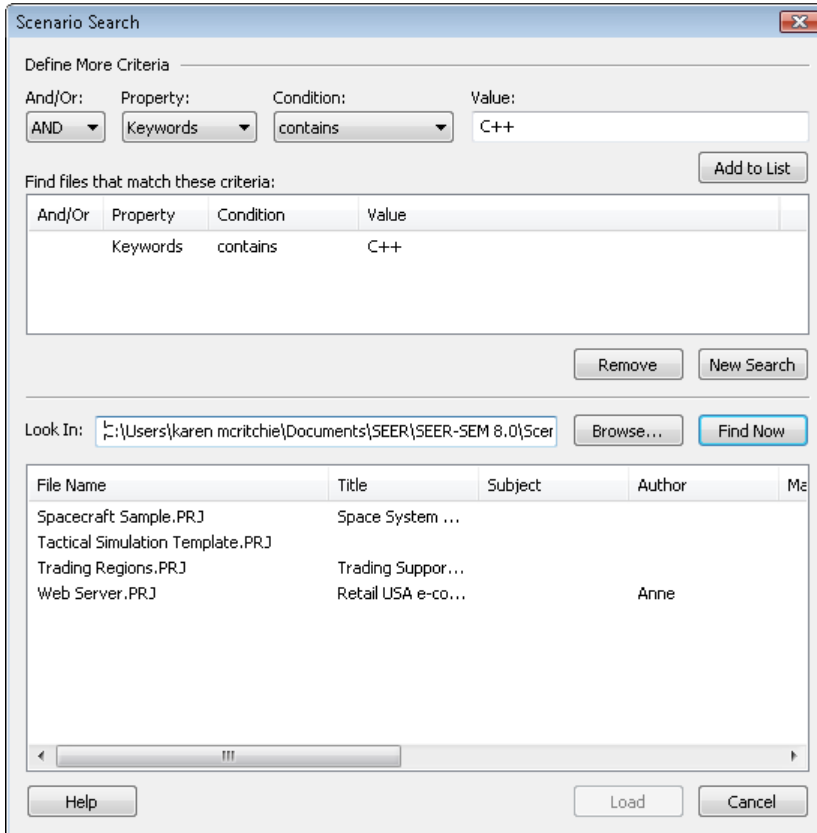
Delete Multiple WBS Elements

The Delete WBS Element functionality has been enhanced. Multiple elements, including elements with subordinate elements, can now be deleted. After selecting the element(s) to be deleted, a new Delete WBS Elements dialog will display all the elements to be deleted to confirm the selections.
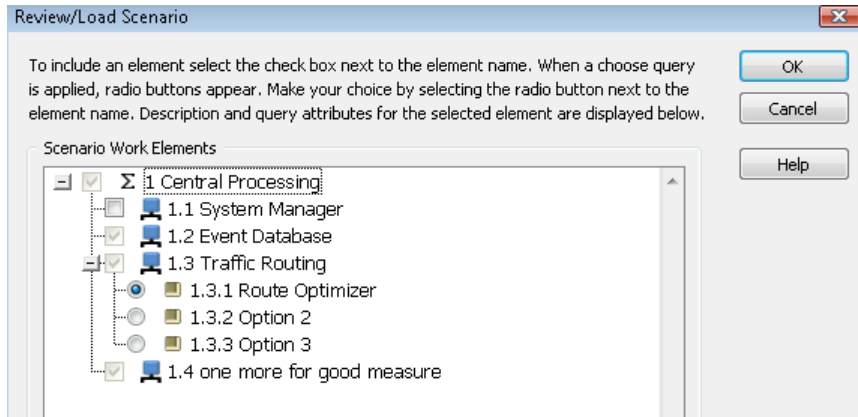
Scenarios

The Scenario Search dialog has been updated to make it easier to find a scenario. When the dialog is opened, it will now automatically populate the list with all scenarios saved in the Scenario path location.

A new Preview Scenario dialog has been added allowing you to make all WBS Element query selections at once instead of having to do them one at a time.

Rollup Risk Analysis

Reports

The three Rollup Risk reports are now included in the available list of reports that can printed and exported using the Publish Reports and Export Reports functionality.

The new Maintenance Risk report shows a statistically defensible estimate of the relative contribution of various WBS element uncertainties towards overall uncertainty in maintenance effort/cost. Similar to the other Rollup Risk reports, it is available only when Enable Rollup Risk Analysis mode is enabled.

The Development Risk report now includes a toggle allowing you to switch the display between development cost and development hours. The toggle is also available in the Maintenance Risk report for switching the display between maintenance cost and maintenance hours.

"Project" has been removed from the Rollup Risk report names.

If an excluded rollup element has subordinate elements, the subordinate elements are no longer included in the Rollup Risk calculations.

Charts

The Effort Risk and Maintenance Risk charts are now enabled at the Rollup level.

Flexible Export

The existing items in the MONTE CARLO ANALYSIS section of the available outputs have been renamed to include "Development" to distinguish the outputs from the "Maintenance" outputs.

The MONTE CARLO ANALYSIS section of the available outputs now includes the new items that were added to the Rollup Risk reports:

Development Hours Risk Independent
Development Hours Risk Dependent
Maintenance Cost Risk Independent
Maintenance Cost Risk Dependent
Maintenance Hours Risk Independent
Maintenance Hours Risk Dependent
Schedule Risk Mean Independent
Schedule Risk StdDev Independent
Schedule Risk Mean Dependent
Schedule Risk StdDev Dependent

Maintenance Cost Risk Mean Independent
Maintenance Cost Risk StdDev Independent
Maintenance Hours Risk Mean Independent
Maintenance Hours Risk StdDev Independent
Maintenance Cost Risk Mean Dependent
Maintenance Cost Risk StdDev Dependent
Maintenance Hours Risk Mean Dependent
Maintenance Hours Risk StdDev Dependent

Server Mode

Two new server mode commands are now available:

The MonteCarloEnabled command can be used to turn on/off the Enable Rollup Risk Calculation option.

Format

```
MonteCarloEnabled <YES/NO>
```
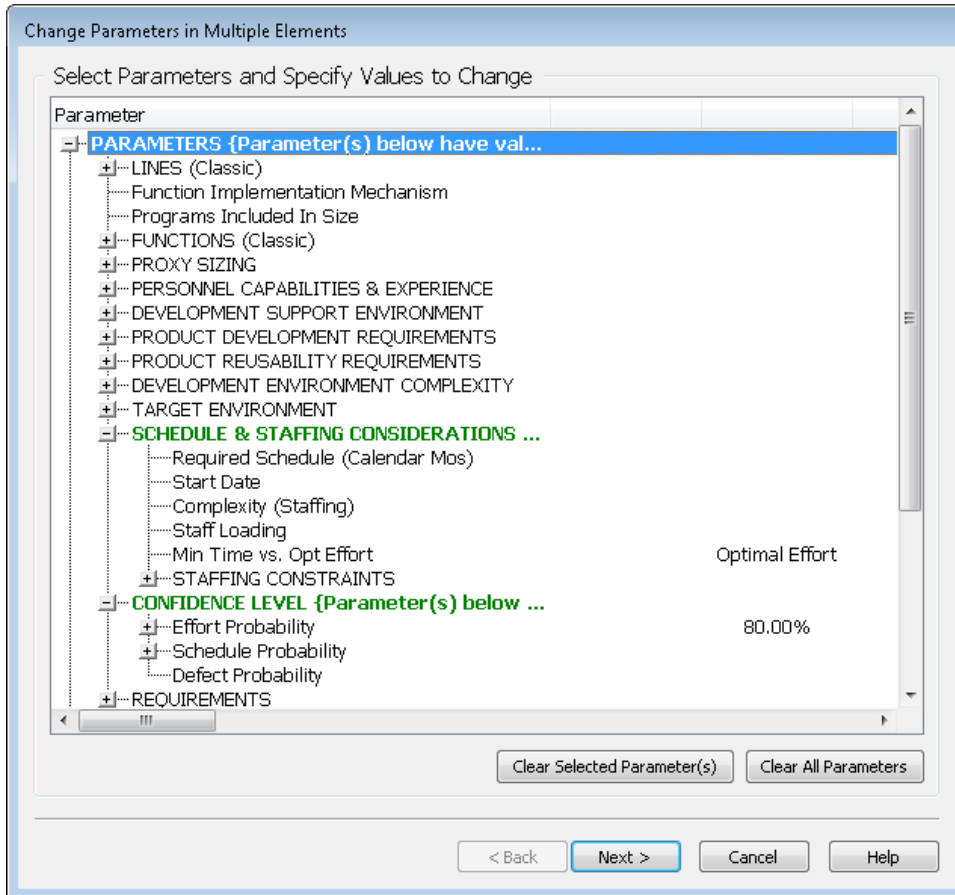
Example

```
MonteCarloEnabled YES
```

The MonteCarloRecalc command can be used to force a recalculation of the Monte Carlo results so that they can be exported. If you are running SEER-SEM through server mode or the Automation Interface and you want to export Monte Carlo results, this command must be issued before exporting the data.
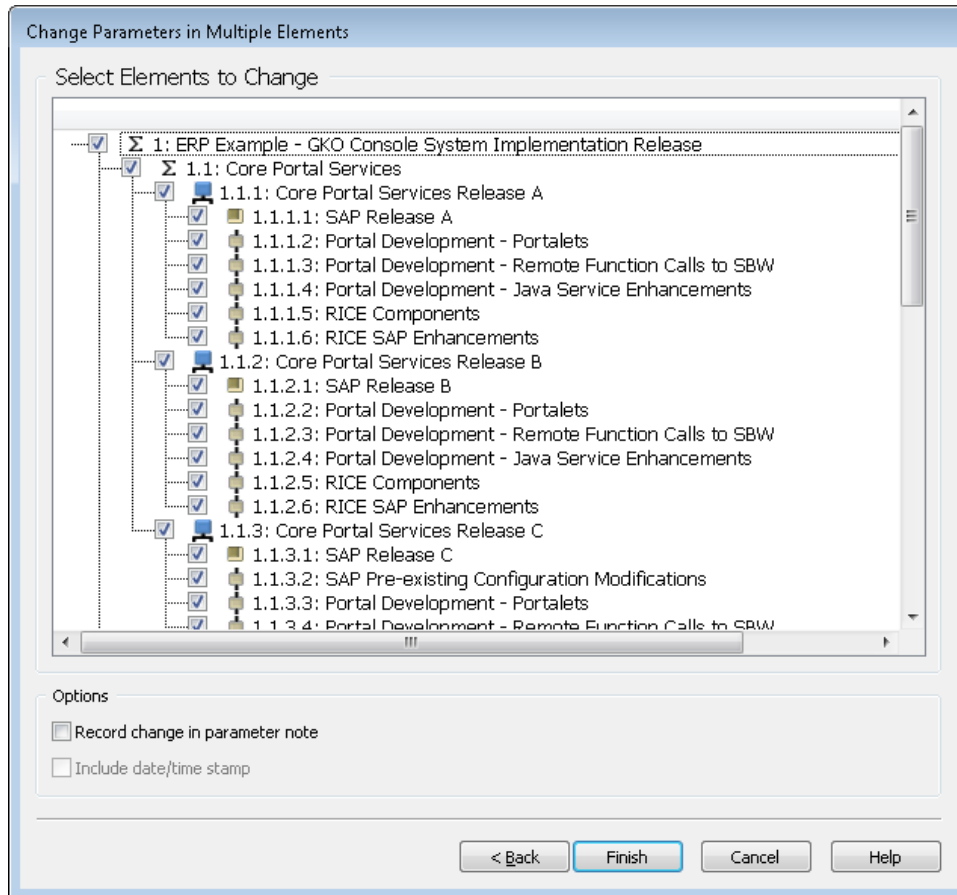
Example

```
MonteCarloRecalc
```

Change Parameters in Multiple WBS Elements

The Change Parameters in Multiple Elements dialog has been redesigned and updated to make it more intuitive for the user.
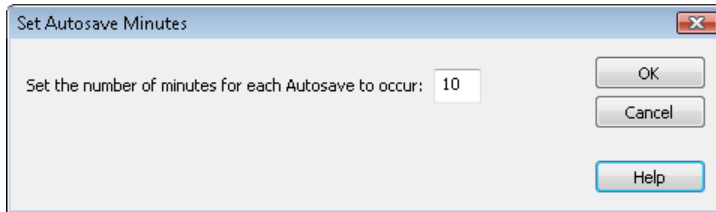
When you are done making the parameter changes, click the next button and you can choose which WBS elements to change. You have the option annotate the block change
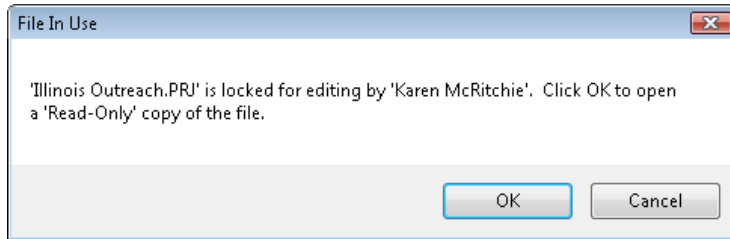
File Autosave

Autosave automatically saves a copy of the open project at the interval indicated in the Set Autosave Minutes dialog. This optional feature is enabled from the options menu. When you enable autosave, you can set the autosave interval. Autosave applies to project files and not projects opened from the database.

Read-Only Option for Open Files

A 'Read-Only' copy of a project can now be opened if a project is locked for editing (i.e., already open).

Miscellaneous

Your SEER-SEM files from previous 8.0 releases (8.0.6 or 8.0.14) can be used in this 8.0 version. However, project files saved in 8.0.20 will no longer be compatible with previous 8.0 releases (8.0.6 or 8.0.14). It is recommended that backups of your project files are made before you use them in 8.0.20.

Other Enhancements

- Projects can now be opened in SEER-SEM by dragging and dropping the *.prj file into the SEER-SEM window (e.g., from Windows Explorer, Email, etc.).
- The View menu "Show WBS Element Outline" and "Show WBS Element Icons" settings are now saved when doing a Save Configuration.
- The number of languages available for the Function Implementation Mechanism parameter has been increased to support 1000 items.
- In the parameter entry dialog, added a keyboard shortcut, > key, for the ">" button.

- The Flexible Export dialog now includes an option to "Suppress elements excluded from rollup". If this option is selected, then WBS elements excluded from rollups will not be exported.
- In the Flexible Export dialog, the first group of Available Outputs, BASIC ESTIMATE, is now expanded when the dialog is opened.
- When initially saving a project, the default for the file name will now be the project element description.

Fixes

- Fixed an issue with the Inputs with Notes report when using the Publish Reports or Export Report feature. The Inputs with Notes report can now be printed/exported for all applicable elements when the "Entire Project" or "Include Current WBS Element Plus Subordinates" option is selected.
- Fixed an issue that sometimes appeared when saving a project to the SEER Enterprise Database. In certain scenarios, an erroneous Estimate to Complete parameter value would result in a misleading error during the save.
- Projects with the "%" character in the file name can now be opened in SEER-SEM by double-clicking on the file name.
- When a lower level element is selected in the Project WBS, using the Load Individual Knowledge Base feature will now load the correct parameter values for parent level parameters for the selected element.
- When inserting a lower level element, 1) parameter notes in the Function Based Sizing view are now transferred to the lower level element and 2) proxy sizing inputs are now transferred to the lower level element.
- When using server mode to apply staffing constraints, if the Min Staff value is greater than the Max Staff value, the values are now applied correctly.
- Restored the right-click context menu behavior in the Top 10 Effort Impacts chart.

Upgrade Information

The following are special considerations for the users of earlier SEER-SEM versions.

Installation

You do not have to uninstall SEER-SEM 7.3 to install SEER-SEM 8.0. In fact, it is recommended that you maintain your SEER-SEM 7.3 installations. We do recommend, however, that you uninstall any beta release versions you have installed.

File Upconvert

Your SEER-SEM files from 7.3 or earlier can be used in this 8.0 version. However project files saved in 8.0 will no longer be compatible with 7.3 or earlier versions. It is recommended that backups of your project files are made before you use them in 8.0.

Estimate Compatibility

Your SEER-SEM 8.0 estimates will be compatible with earlier versions of SEER-SEM.   Old projects will be loaded with the legacy settings.   To take advantage of new estimate options, go to Options/Set Project Parameters.   Specific areas of estimate compatibility are described here.

Calibration Factors

If you load a legacy project from an older version of SEER-SEM, calibration adjustments at the lower level will be set to the general factor in old projects, thus maintaining backwards compatibility.

Minimum Staff Option

This option will be enabled by default for new estimates.   Estimates from old projects will have this option disabled.   If you want to take advantage of this new estimate option, go to Options/Set Project Parameters and check "Assume Minimum Staff" under the Schedule Options.

Staff Constrained Estimates

Because of changes to the SEER-SEM mathematical structure to accommodate detailed calibration factors, the calculations that apply penalties or rewards for staff constrained scenarios has been changed.   Overall you should get answers that are consistent with previous versions of SEER-SEM, but they won't necessarily be exactly the same. In most cases, estimate differences are within 2% of SEER-SEM 7.3 results. You will see no changes in your estimates if you do not have any explicit staffing constraints and you have not applied any of the new SEER-SEM 8.0 math options.

Maintenance Estimates

New estimates will take advantage of the new maintenance model changes.   However, legacy projects will be loaded with the SEER-SEM 7.3 backwards compatibility option enabled.   This backwards compatibility mode will mean that new maintenance parameters will not be enabled and effort calculated will be based on legacy math.   To take advantage of the new maintenance estimate options, go to Options/Set Project and make sure "SEM 7.3 (or earlier) Compatibility" is unchecked.