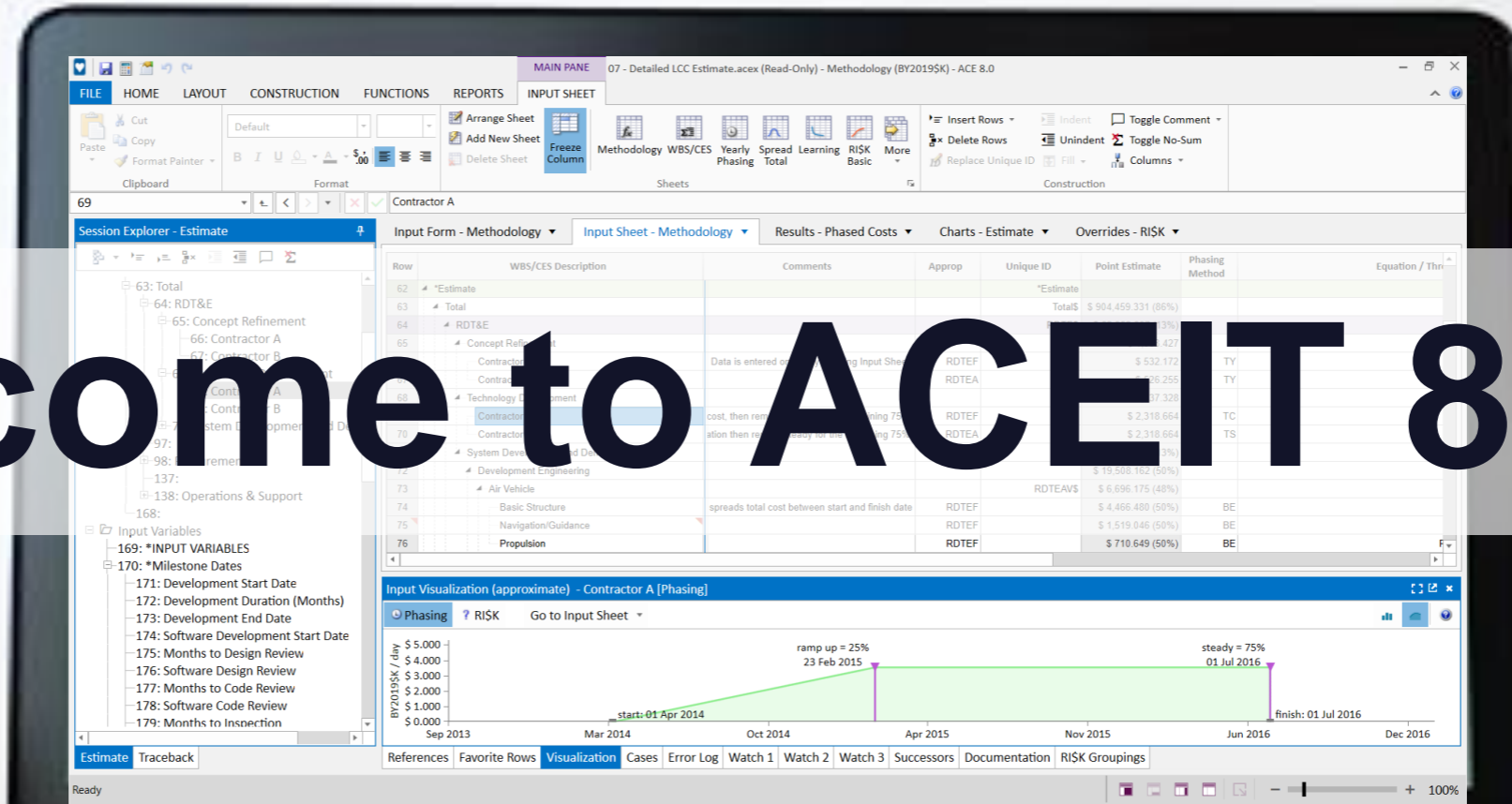


Welcome to ACEIT 8.0



ACEIT 8.0: Designed with our Users in Mind

Developed *by* cost analysts *for* cost analysts

New
Model Builders



Experienced
Model Builders



Model
Reviewers



Challenges for our Users

New Model Builders



- Getting started
- Learning modeling basics
- Gaining proficiency quickly

Experienced Model Builders



- Modeling efficiently
- Adding model complexity
- Managing model performance

Model Reviewers



- Quickly understanding
- Reviewing for consistency
- Validating the modeling approach

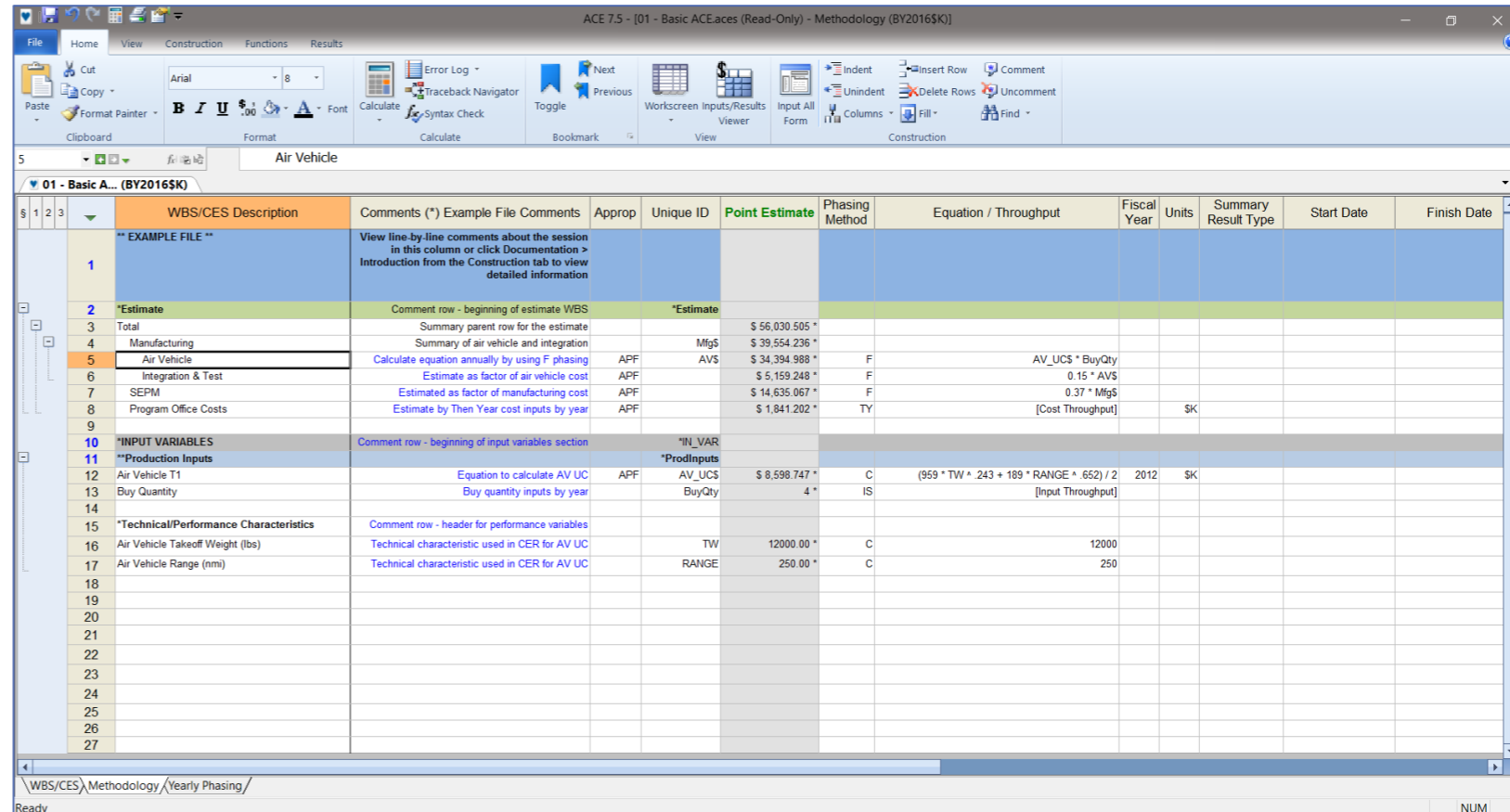
Design and Development Challenges

A Little History

- ACEIT's basic architecture framework ties back to ACEIT 3.0 from 1996
- ACEIT's file format last revision was with ACEIT 7.0 in 2006

Preparing for 's Future





- The architectural framework needed to be updated
- The file format introduced with ACEIT 7.0 is the basis for the ACEIT 8.0 however, it was significantly updated



WBS/CES Description	Comments (*)	Example File Comments	Approp	Unique ID	Point Estimate	Phasing Method	Equation / Throughput	Fiscal Year	Units	Summary Result Type	Start Date	Finish Date
** EXAMPLE FILE **	View line-by-line comments about the session in this column or click Documentation > Introduction from the Construction tab to view detailed information											
*Estimate	Comment row - beginning of estimate WBS											
Total	Summary parent row for the estimate				\$ 56,030,505 *							
Manufacturing	Summary of air vehicle and integration			Mfg\$	\$ 39,554,236 *							
Air Vehicle	Calculate equation annually by using F phasing		APF	AVS	\$ 34,394,988 *	F	AV_UCS * BuyQty					
Integration & Test	Estimate as factor of air vehicle cost		APF		\$ 5,159,248 *	F	0.15 * AVS					
SEPM	Estimated as factor of manufacturing cost		APF		\$ 14,635,067 *	F	0.37 * Mfg\$					
Program Office Costs	Estimate by Then Year cost inputs by year		APF		\$ 1,841,202 *	TY	[Cost Throughput]		\$K			
*INPUT VARIABLES	Comment row - beginning of input variables section											
*Production Inputs	*ProdInputs											
Air Vehicle T1	Equation to calculate AV UC		APF	AV_UCS	\$ 8,598,747 *	C	(959 * TW ^ .243 + 189 * RANGE ^ .652) / 2	2012	\$K			
Buy Quantity	Buy quantity inputs by year			BuyQty	4 *	IS	[Input Throughput]					
*Technical/Performance Characteristics	Comment row - header for performance variables											
Air Vehicle Takeoff Weight (lbs)	Technical characteristic used in CER for AV UC			TW	12000.00 *	C			12000			
Air Vehicle Range (nmi)	Technical characteristic used in CER for AV UC			RANGE	250.00 *	C			250			

Save a back-up copy of your 7.5 file before converting to 8.0

ACEIT 8.0 Release Summary

-  ACE modernization is the focus of ACEIT 8.0
-  CO\$TAT includes some added statistical analysis measures
-  POST updated for compatibility with new .acex sessions
-  JACS includes some calculation engine improvements

 ACDB removed from ACEIT:

Independent new web ACDB available to government users in JIAT

*This presentation primarily focuses on ACE
Consult the ACEIT 8.0 release notes for full details*

ACE 8.0 Complete Rebuild

- **New platform:** Opened up the potential to implement features not available in the old platform
- **New environment:** Upgraded the User interface and calculation engine
 - User interface - a mix of Visual Basic and C# using the .NET 4.5 framework
 - Engine - written in Visual C++ 2017
- **Complete interface rebuild:** Coded all new interface
- **Engine:** reusing calculation engine code to ensure the results stay the same
- **Redesign:** Offered the opportunity to relook at features and assess potential new directions



Opening ACE 8.0

```
private=function(b,d,e){return  
).attr("aria-expanded",!1),  
("fade"),b.parent(".dropdo  
=d.find("> .active"),h=e&&  
,f).emulateTransitionEnd  
t=function(){return a.fn.t  
,e).on("click.bs.tab.data  
d.data("bs.offi")
```

We reorganized the workspace to better meet the challenges of our users

New Workspace Builds off Familiar Elements



ACE 7.5 - [01 - Basic ACE.acex (Read-Only) - Methodology (BY2016\$K)]

WBS/CES Description	Comments (*) Example File Comments	Approp	Unique ID	Point Estimate	Phasing Method	Equation / Throughput	Fiscal Year	Units	Summary Result Type	Start Date	Finish Date
EXAMPLE FILE	View line-by-line comments about the session in this column or click Documentation > Introduction from the Construction tab to view detailed information										
*Estimate	Comment row - beginning of estimate WBS		*Estimate								
Total	Summary parent row for the estimate			\$ 56,030,505 *							
Manufacturing	Summary of air vehicle and integration			\$ 39,554,236 *							
Air Vehicle	Calculate equation annually by using F phasing	APF	AVS	\$ 34,394,888 *	F	AV_UCS * BuyQty					
Integration & Test	Estimate as factor of air vehicle cost	APF		\$ 5,159,248 *	F	0.15 * AVS					
SEPM	Estimated as factor of manufacturing cost	APF		\$ 14,635,067 *	F	0.37 * MfgS					
Program Office Costs	Estimate by Then Year cost inputs by year	APF		\$ 1,841,202 *	TY	[Cost Throughput]			SK		
*INPUT VARIABLES	Comment row - beginning of input variables section		*IN_VAR								
*Production Inputs			*ProdInputs								
Air Vehicle T1	Equation to calculate AV UC	APF	AV_UCS	\$ 8,598,747 *	C	(959 * TW ^ .243 + 189 * RANGE ^ .652) / 2	2012	SK			
Buy Quantity	Buy quantity inputs by year		BuyQty	4 *	IS	[Input Throughput]					
*Technical/Performance Characteristics	Comment row - header for performance variables										
Air Vehicle Takeoff Weight (lbs)	Technical characteristic used in CER for AV UC		TW	12000.00 *	C		12000				
Air Vehicle Range (nmi)	Technical characteristic used in CER for AV UC		RANGE	250.00 *	C		250				

01 - Basic ACE.acex (Read-Only) - Methodology (BY2019\$K) - ACE 8.0

WBS/CES Description	Comments	Approp	Unique ID	Point Estimate	Phasing Method	Equation / Throughput	Fiscal Year	Units	Start Date
EXAMPLE FILE									
*Estimate	Comment row - beginning of estimate WBS		*Estimate						
Total	Summary parent row for the estimate			\$ 56,994,244					
Manufacturing	Summary of air vehicle and integration		MfgS	\$ 40,260,743					
Air Vehicle	Calculate equation annually by using F phasing method	APF	AVS	\$ 35,009,341	FP	AV_UCS * BuyQty			
Integration & Test	Estimate as factor of air vehicle cost	APF		\$ 5,251,401	FP	0.15 * AVS			
SEPM	Estimated as factor of manufacturing cost	APF		\$ 14,896,475	FP	0.37 * MfgS			
Program Office Costs	Estimate by Then Year cost inputs by year	APF		\$ 1,837,027	TY	[Cost Throughput]		SK	
*INPUT VARIABLES			*IN_VAR						
*Production Inputs			*ProdInputs						
Air Vehicle T1	Equation to calculate AV UC	APF	AV_UCS	\$ 8,752,335	C	(959 * TW ^ .243 + 189 * RANGE ^ .652) / 2	2015	SK	
Buy Quantity	Buy quantity inputs by year		BuyQty	4.000	IS	[Input Throughput]			
*Technical Inputs	Comment row - header for performance variables		*TechnicalInputs						
Air Vehicle Takeoff Weight (lbs)	Technical characteristic used in CER for AV UC		TW	12,000.000	C		12000		
Air Vehicle Range (nmi)	Technical characteristic used in CER for AV UC		RANGE	250.000	C		250		

8.0 Workspace Improves How you “See” the Model

Session Explorer

Main Pane

The screenshot displays the software interface with the following components:

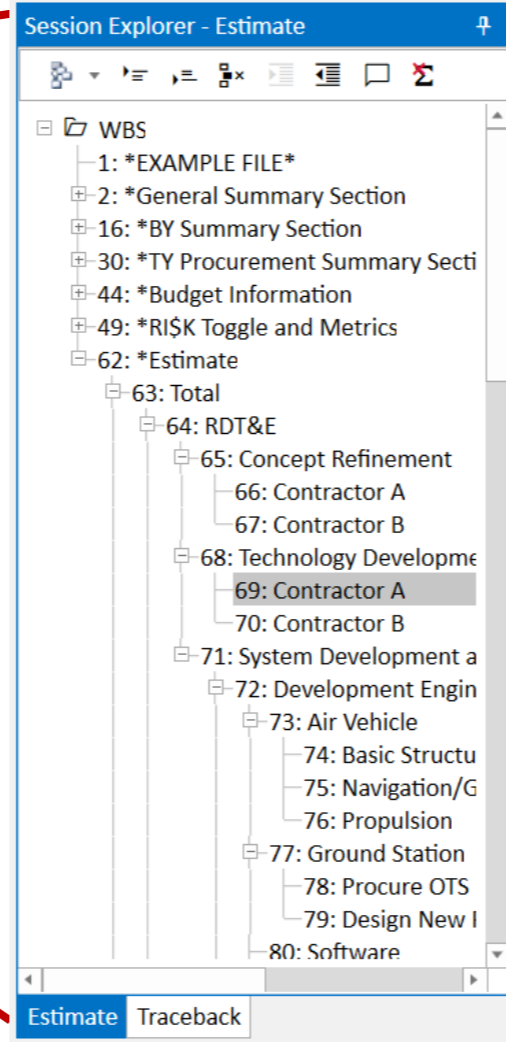
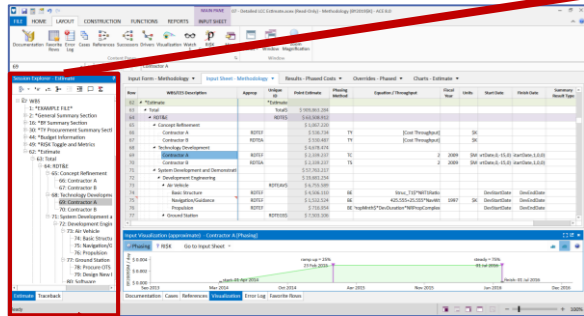
- Session Explorer (Left):** A tree view showing the project structure:
 - WBS
 - 1: *EXAMPLE FILE*
 - 2: *Estimate
 - 3: Total
 - 4: Manufacturing
 - 5: Air Vehicle
 - 6: Integration & Test
 - 7: SEPM
 - 8: Program Office Costs
 - 9:
 - Input Variables
 - Milestone Phasing Profiles
 - Data Tables
 - RISK CDFs
- Main Pane (Center):** A table with columns: Row, WBS/CES Description, Comments, Approp, Unique ID, Point Estimate, Phasing Method, and Equation / Throughput.

Row	WBS/CES Description	Comments	Approp	Unique ID	Point Estimate	Phasing Method	Equation / Throughput
1	*EXAMPLE FILE*						
2	*Estimate	Comment row - beginning of estimate WBS		*Estimate			
3	Total	Summary parent row for the estimate			\$ 56,994.244		
4	Manufacturing	Summary of air vehicle and integration		Mfg\$	\$ 40,260.743		
5	Air Vehicle	late equation annually by using F phasing method	APF	AV\$	\$ 35,009.341	FP	AV_U
6	Integration & Test	Estimate as factor of air vehicle cost	APF		\$ 5,251.401	FP	
7	SEPM	Estimated as factor of manufacturing cost	APF		\$ 14,896.475	FP	
8	Program Office Costs	Estimate by Then Year cost inputs by year	APF		\$ 1,837.027	TY	[Cost
9							
10	*INPUT VARIABLES			*IN_VAR			
11	**Production Inputs			*ProdInputs			
12	*Cost Inputs			*CostInputs			
13	Air Vehicle T1	Equation to calculate AV UC	APF	AV_UC\$	\$ 8,752.335	C	(959*TW^.243+189*RA
14	*Quantity Inputs			*QuantityInputs			
15	Buy Quantity	Buy quantity inputs by year		BuyQty	4.000	IS	[Input
16	*Technical Inputs	Comment row - header for performance variables		*TechnicalInputs			
17	Air Vehicle Takeoff Weight (lbs)	Technical characteristic used in CER for AV UC		TW	12,000.000	C	
18	Air Vehicle Range (nmi)	Technical characteristic used in CER for AV UC		RANGE	250.000	C	
- Documentation Pane (Bottom):** A pane titled "Documentation - Air Vehicle" containing the text:

AIR VEHICLE - The air vehicle element refers to the complete flying aircraft, including airframe, propulsion, and all other installed equipment. It includes the design, development, and production of complete units. It also includes the integration, assembly, test and checkout of all remaining elements into the airframe to form the complete air vehicle.

Content Panes

Session Explorer: Improves Model Navigation

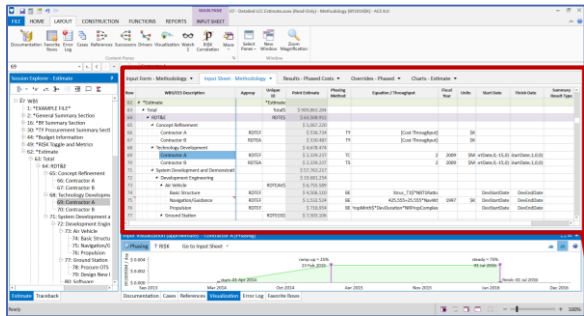


Use the Session Explorer to navigate the model

- Estimate mode
 - View session WBS tree
 - Organize input variables
 - See elements previously hidden: Milestone Profiles and Custom CDFs
 - Build new data tables
- Traceback mode
 - Replaces Traceback Navigator

Main Pane: Gives Easy Access to Inputs and Results

Combines the functionality of the: ACE Workscreens, Input All Form, Input/Results View and Chart dialog in one flat interface



Input Form - Methodology | Input Sheet - Methodology | Results - Phased Costs | Overrides - Phased | Charts - Estimate

Row	WBS/CES Description	Approp	Unique ID	Point Estimate	Phasing Method	Equation / Throughput	Fiscal Year	Units	Start Date	Finish Date	Summary Result Type
62	*Estimate		*Estimate								
63	Total		Total\$	\$ 909,863.284							
64	RDT&E		RDTE\$	\$ 63,508.912							
65	Concept Refinement			\$ 1,067.220							
66	Contractor A	RDTEF		\$ 536.734	TY	[Cost Throughput]		\$K			
67	Contractor B	RDTEA		\$ 530.487	TY	[Cost Throughput]		\$K			
68	Technology Development			\$ 4,678.474							
69	Contractor A	RDTEF		\$ 2,339.237	TC		2 2009	\$M	artDate,0,-15,0)	StartDate,1,0,0)	
70	Contractor B	RDTEA		\$ 2,339.237	TS		2 2009	\$M	artDate,0,-15,0)	StartDate,1,0,0)	
71	System Development and Demonstrati			\$ 57,763.217							
72	Development Engineering			\$ 19,681.254							
73	Air Vehicle		RDTEAV\$	\$ 6,755.589							
74	Basic Structure	RDTEF		\$ 4,506.110	BE	Struc_T1\$*NRT1Ratio			DevStartDate	DevEndDate	
75	Navigation/Guidance	RDTEF		\$ 1,532.524	BE	425.555+25.555*NavWt	1997	\$K	DevStartDate	DevEndDate	
76	Propulsion	RDTEF		\$ 716.954	BE	ropMnth\$*DevDuration*NRPropComplex			DevStartDate	DevEndDate	
77	Ground Station		RDTEGSS\$	\$ 7,503.106							

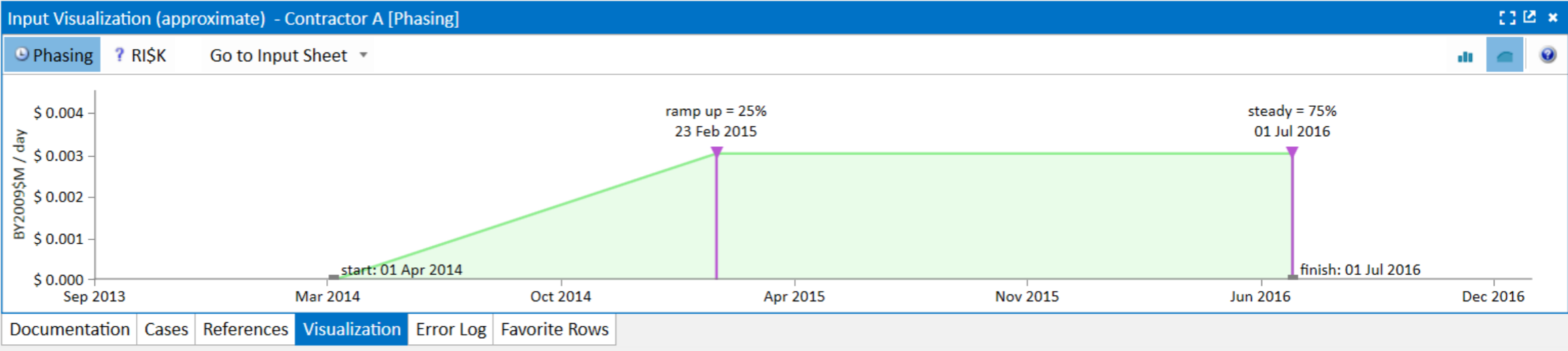
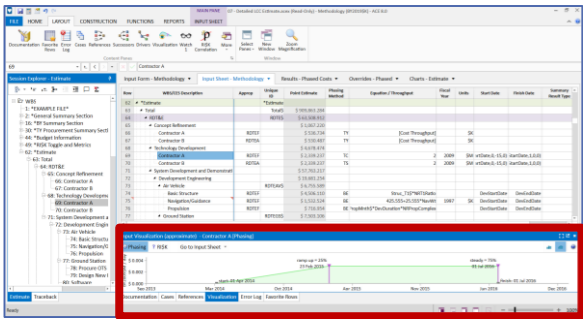
Main Pane tabs

- Input Forms
- Input Sheets
- Results
- Overrides
- Charts

Content Panes: Provide Model Detail Visibility

Content panes add **insight** to the workspace

- Thirteen views covering documentation, visualization, cases, error log, reference rows, driver rows and more





ACE 8.0 Helps New Users

- New Model Builders may be new to cost analysis, new to ACE or both
- ACE helps analysts learn sound practices and ensures methods are applied properly

Get Started Quickly with New Session Screen

Session Settings

- Enter all estimate information and inflation specifications in one location
- Includes Mil Std 881-D templates
- Tailor WBS indenture prior to creating the session

The screenshot shows the 'New' session creation screen in ACE 8.0. The interface is divided into three main sections:

- Initial WBS:** A list of WBS templates is shown, including 'Aircraft System WBS (881D)', 'AIRCRAFT SYSTEM WBS (ESH)', 'Army CES Aircraft (881D)', 'Army CES AIS', 'Army CES Electronic/Generic (881D)', 'Army CES Ground Vehicle (881D)', 'Army CES Missile/Ordnance (881D)', 'Army CES Space (881D)', 'Army CES Strategic Missile (881D)', 'ASC SMALL MISSILE/MUNITION SYSTEM', 'ASC/RW EW SYSTEMS', 'ASC/SM AERONAUTICAL SYSTEMS', 'BMDO LIFE CYCLE CBS', 'DHS IT LCC WBS', 'DHS Security System WBS', 'ELECTRONIC/AUTO S/W SYS WBS (ESH)', 'Electronic/Generic System WBS (881D)', 'ENVIRONMENTAL WBS', 'ESC ELECTRONIC SYSTEMS', 'FAA LIFE CYCLE COSTS', 'FAA Standard WBS version 5.1', 'FAA Standard WBS Version 5.2', and 'FAA1810 WBS'. A 'Create' button is located at the bottom of this list.
- Session Settings:** This section contains several sub-sections:
 - Estimate Information:** Fields for Program Name (My Program), Base Year (2019), Units (Thousands), Currency (\$), First Year (2019), Last Year (2029), and Default Case (Point Estimate).
 - Monthly:** A checkbox for 'Has Monthly Inputs'.
 - System Inflation Table:** Fields for Name (US Government Indices for FY 2018), As of Date (14May2018), Year Type (Fiscal), Start Month (October), and Appropriation Type (Codes, e.g., 3010).
 - Enter WBS:** A table for entering WBS descriptions and indent levels. The table has columns for WBS/CES Description, WBS Indent Level, Row, WBS/CES Description, and WBS Indent Level. A 'Validate' button is present below the table.

Create Estimates with Guidance from Input Forms

Use guidance on input forms to select from four methodology types

- Periodic
- Time phased inputs
- Spread total
- Learning Curves

The screenshot displays the 'Input Form - Methodology' interface. At the top, there are tabs for 'Input Form - Methodology', 'Input Sheet - Methodology', 'Results - Phased Costs', 'Overrides - Phased', and 'Charts - RISK'. Below the tabs, there is a 'Title' field containing 'New Row' and a 'Unique ID' field. To the right of these fields are icons for a circular arrow with 'a·x+b', a calendar, a bell curve, and a learning curve. The main area contains four methodology options, each with a title, an icon, and a description:

- Periodic (Yearly/Monthly) Calculation or Constant**: Specify an Equation/Value to be calculated periodically or a Constant value (cost, non-cost, or date).
- Time Phased (Yearly/Monthly) Inputs**: Specify time phased cost (BY, TY, or SY) or non-cost values.
- Spread Total over Time Calculation**: Specify total value/equation, and how to spread it over time using Beta curve, Weibull, Rayleigh, Trapezoid, Percentages or Milestone phasing profile.
- Learning Curve Calculation**: Specify cost improvement curve parameters to calculate learning curve.

Create Equations and Variables on-the-fly

Specify the estimating method and enter variables from one location

- Define new variables
- Select the variable type
- Specify a location to store the variable

The screenshot displays a software interface for defining variables. At the top, there are tabs for 'Input Form - Methodology', 'Input Sheet - Methodology', 'Results - Phased Costs', 'Charts - Estimate', and 'Overrides - Phased'. Below the tabs, there are input fields for 'Title: New Row', 'Unique ID:', 'CES#:', 'WBS#:', and 'PE Value:'. A sidebar on the left contains icons for 'Periodic' and 'Constant'. The main area shows 'Equation/Value' with a value of '100' and 'Start Date: DevStartDate'. A red box highlights a dropdown menu for 'Add new variable: DevStartDate' with the following options: Cost Variable, Phased Quantity Variable, Total Quantity Variable, Date Variable (highlighted), Duration Variable, Technical Variable, Factor Variable, Choice Variable, and General Variable. A second, larger dropdown menu is shown to the right, listing the same options, with 'Date Variable' also highlighted. A red line connects the two dropdown menus.

Model Basic Elements from Relevant Data

View the equation and all variables in one view

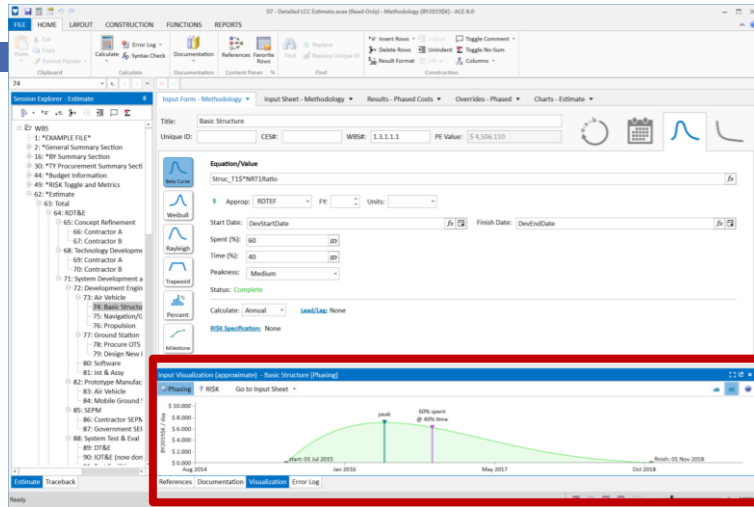
- Session Explorer: shows the WBS row
- Input Form: shows the equation and phasing
- References Pane: shows all the variables used in the row's calculation

The screenshot displays the ACEIT software interface for a detailed LCC estimate. The main window is titled '07 - Detailed LCC Estimate.acex (Read-Only) - Methodology (BY2019\$K) - ACE 8.0'. The interface is divided into several panes:

- Session Explorer - Estimate:** A tree view on the left showing the Work Breakdown Structure (WBS) hierarchy. The selected row is '74: Basic Structure'.
- Input Form - Methodology:** The central pane showing the configuration for the 'Basic Structure' row. It includes fields for Title, Unique ID, CES#, WBS#, and PE Value. The 'Equation/Value' field contains the formula $Struc_T1\$*NRT1Ratio$. Other parameters include 'Approp: RDTEF', 'Start Date: DevStartDate', 'Finish Date: DevEndDate', 'Spent (%): 60', 'Time (%): 40', and 'Peakness: Medium'.
- References - Rows used by Basic Structure:** A table at the bottom showing the rows used in the calculation. The table has columns for Row, WBS/CES Description, Approp, Unique ID, Equation/Value, Result, Fiscal Year, Units, and Used In.

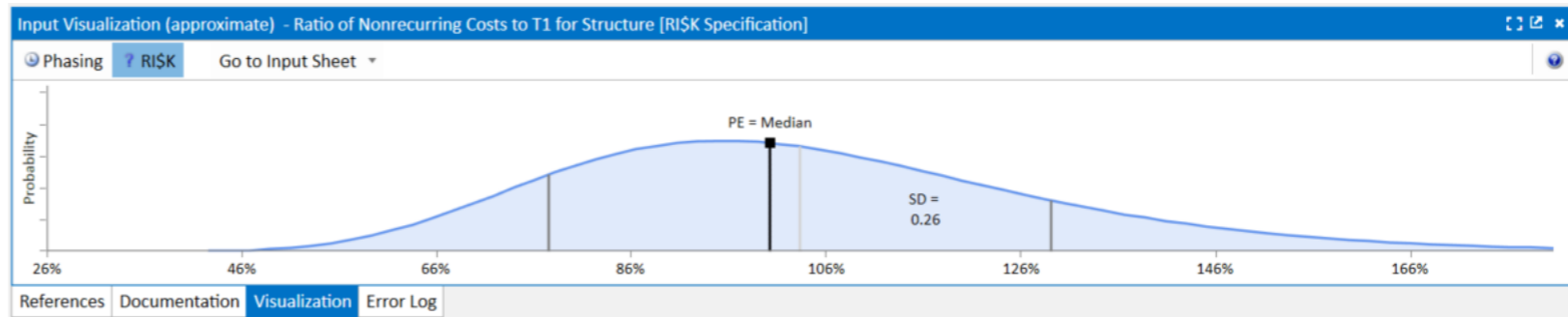
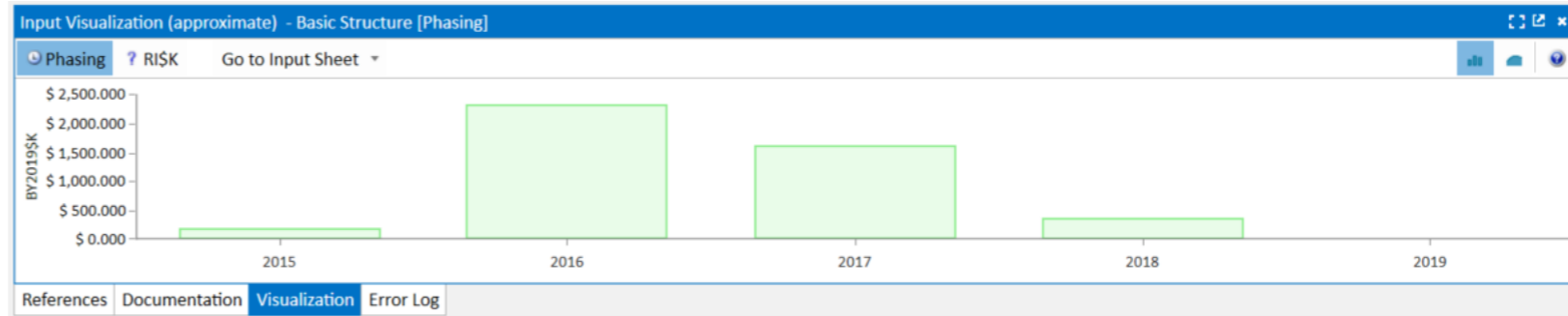
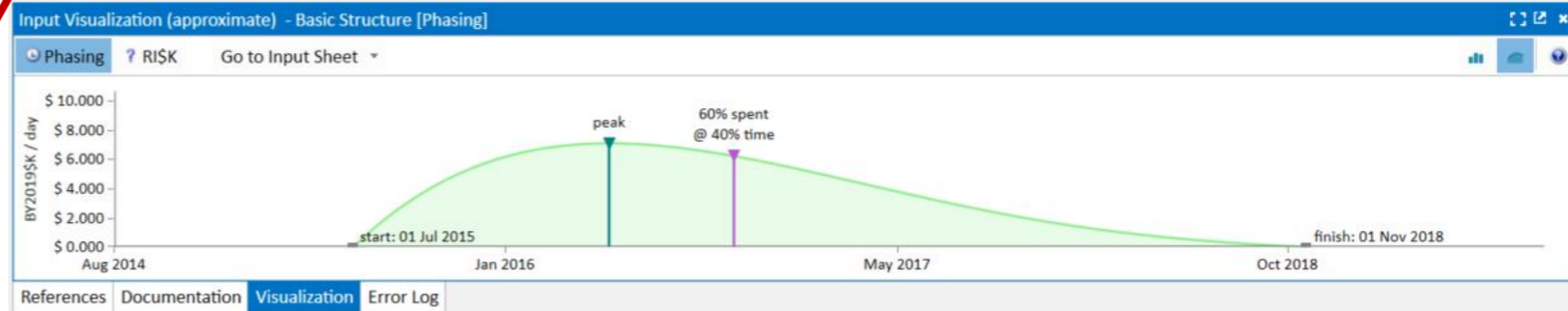
Row	WBS/CES Description	Approp	Unique ID	Equation/Value	Result	Fiscal Year	Units	Used In
199	Basic Structure T1	APF	Struc_T1\$		1200	\$ 1,287.460	2015	\$K Equation / Throughput
223	Ratio of Nonrecurring Costs to T1 for Structure		NRT1Ratio		3.5	4		Equation / Throughput
171	Development Start Date		DevStartDate		01Jul2015	01JUL2015		Start Date
173	Development End Date		DevEndDate	DateAdd(DevStartDate,0,DevDuration,0)		01NOV2018		Finish Date

Better Understand Phasing and RI\$K Inputs



Improve your input understanding with data visualizations

- View the shape of the phasing and uncertainty
- Explore phasing adjustments by selecting and dragging parameters



Store Documentation within your Estimate Files

- Enter documentation for any cell
- View Cell Documentation in the Content Pane

The screenshot displays the ACEIT software interface. The main window shows a spreadsheet titled 'Input Sheet - Methodology' with columns for 'Row', 'WBS/CES Description', 'Approp', 'Unique ID', 'Point Estimate', 'Phasing Method', 'Equation / Throughput', 'Fiscal Year', 'Units', and 'St'. A yellow tooltip is visible over the 'MANUFACTURING - This element includes the costs of materiel, labor, and other expenses incurred in the fabrication, checkout and processing of parts, subassemblies, and major assemblies/ subsystems needed for the final system.' cell. A green box highlights the 'Documentation - Manufacturing (Air Force) [WBS/CES Description]' tooltip. Below the spreadsheet, a 'Content Pane' is open, showing the same documentation text. The interface includes a ribbon with tabs like 'FILE', 'HOME', 'LAYOUT', 'CONSTRUCTION', 'FUNCTIONS', 'REPORTS', 'EDIT', and 'INPUT SHEET'. The 'Session Explorer - Estimate' pane on the left shows a tree view of the estimate structure, including '100: Manufacturing (Air Force)' and its sub-items.

Row	WBS/CES Description	Approp	Unique ID	Point Estimate	Phasing Method	Equation / Throughput	Fiscal Year	Units	St
98	Procurement		Proc\$	\$ 402,552.968					
99	Air Force Procurement		AF_Proc\$	\$ 267,696.867					
100	Manufacturing (Air Force)		AF_Mfg\$	\$ 102,202.174					
101	Air Vehicle (AF)								
102	Basic Structure (AF)								
103	Navigation/Guidance (AF)								
104	Propulsion (AF)								
105	Integration & Test (AF)								
106	Ground Station LRIP Support (AF)								
107	Transportation (AF)								
108	Initial Operational Test & Eval (AF)								
109	Initial Spares & Repair Parts (AF)	APF		\$ 1,884.336					
110	Basic Structure Init Sprs (AF)	APF		\$ 1,201.624	R	[Shared Learning - StrShr]			
111	Navigation/Guidance Init Sprs	APF		\$ 160.954	FP	AFBuyQty), @BBQL, @BBQLS, 6) * AFInitSprQty			
112	Propulsion Init Sprs (AF)	APF		\$ 521.758	FP	PropT1\$ * AFInitSprQty			
113	Quality Control (AF)	APF		\$ 2,822.494	F	QC% * AF_AV\$			
114	SEPM (AF)	APF		\$ 71,148.474	TC	0.37 * TTOT(@AF_Mfg\$)			

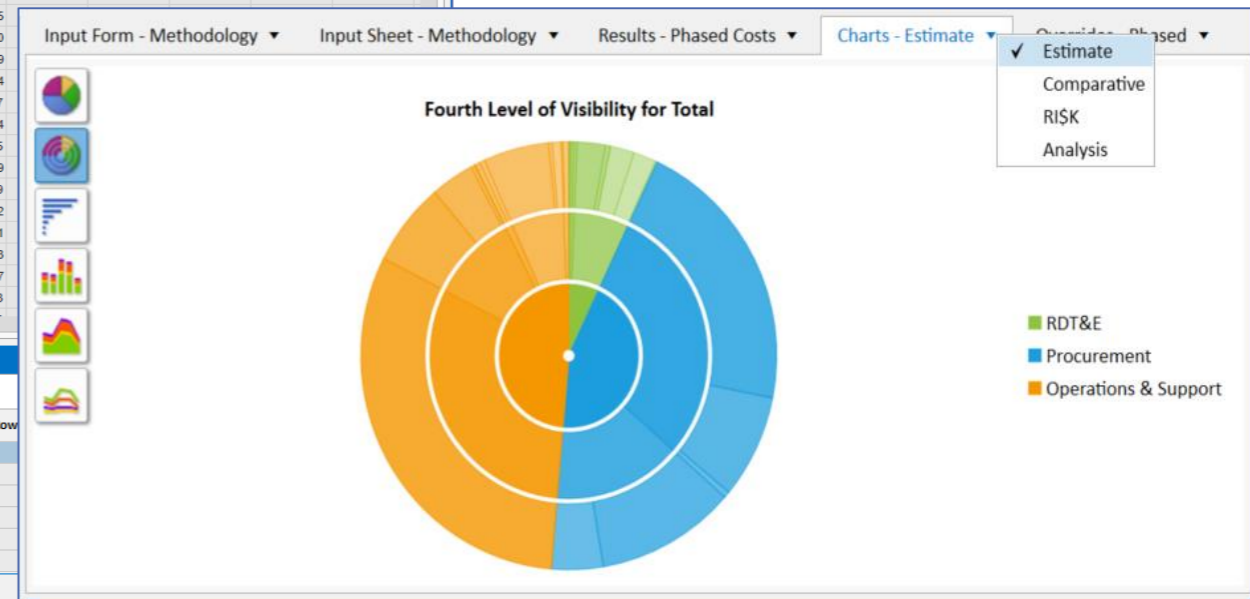
Quickly Create Cases and See Model Results

- Create what-if cases
- Specify case overrides
- View phased results
- Chart case results

The screenshot displays the software interface for creating and viewing model results. On the left is a Session Explorer showing a hierarchical WBS tree. The main pane shows a 'Results - Phased Costs' table with columns for years from 2011 to 2020. A 'Cases' table at the bottom lists various scenarios like 'Higher Uncertainty' and 'New 3010 Budget'. A yellow arrow labeled 'Highlighted Case' points to the 'Point Estimate' row in the 'Cases' table.

Row	WBS/CES Description	Total	FY 2011	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
64	Total	\$ 902,581,337	\$ 8,994,719	\$ 34,751,639	\$ 35,648,978	\$ 24,574,575	\$ 27,775,553	\$ 64,298,804	\$ 86,286,793	\$ 130,528,309
65	RDT&E	\$ 60,672,479	\$ 8,994,719	\$ 16,689,979	\$ 13,176,209	\$ 222,975				
66	Concept Refinement	\$ 1,058,240	\$ 1,058,240							
67	Contractor A	\$ 531,150	\$ 531,150							
68	Contractor B	\$ 527,090	\$ 527,090							
69	Technology Development	\$ 4,710,518	\$ 448,126	\$ 2,386,075	\$ 1,876,317					
70	Contractor A	\$ 2,355,259	\$ 181,954	\$ 1,193,140	\$ 980,166					
71	Contractor B	\$ 2,355,259	\$ 266,172	\$ 1,192,935	\$ 896,151					
72	System Development and Demonstration	\$ 54,903,721	\$ 7,488,399	\$ 6,017,387	\$ 11,308,772	\$ 16,689,979	\$ 13,176,209	\$ 222,975		
73	Development Engineering	\$ 17,326,751	\$ 279,564	\$ 4,960,719	\$ 7,224,444	\$ 4,754,795				
74	Air Vehicle	\$ 6,665,445	\$ 279,552	\$ 3,432,359	\$ 2,412,350	\$ 538,890				
75	Basic Structure	\$ 4,427,036	\$ 185,672	\$ 2,279,694	\$ 1,602,227	\$ 357,919				
76	Navigation/Guidance	\$ 1,534,036	\$ 64,338	\$ 789,949	\$ 555,196	\$ 124,024				
77	Propulsion	\$ 704,373	\$ 29,542	\$ 362,716	\$ 254,926	\$ 56,947				
78	Ground Station	\$ 7,986,468	\$ 1,316,195	\$ 4,618,169	\$ 2,052,104					
79	Procure OTS Parts	\$ 965,726	\$ 527,955	\$ 404,377	\$ 33,395					
80	Design New Parts	\$ 7,020,742	\$ 788,241	\$ 4,213,792	\$ 2,018,709					
81	Software	\$ 477,051	\$ 0.012	\$ 212,165	\$ 193,926	\$ 70,949				
82	Int & Assy	\$ 2,197,787			\$ 2,092,852					
83	Prototype Manufacturing	\$ 3,280,499			\$ 588,738	\$ 2,646,481				
84	Air Vehicle	\$ 2,921,369			\$ 521,181	\$ 2,360,403				
85	Mobile Ground Station	\$ 359,129			\$ 67,557	\$ 286,077				
86	SEPM	\$ 21,293	\$ 2,243	\$ 2,987	\$ 5,203	\$ 5,203				

Case Name	Compare	Time Last Calculated	Description	Overridden Row
Point Estimate	<input checked="" type="checkbox"/>	3/21/2019 5:32:16 PM		0
Higher Uncertainty	<input type="checkbox"/>		Increased uncertainty on Production inputs	4
Lower Propulsion Cost Scenario	<input type="checkbox"/>		Override propulsion unit cost with lower cost.	4
New 3010 Budget and AF Buy Quantities	<input type="checkbox"/>		Override 3010 Budget row to slip money to later	3
Propulsion and OM Mods	<input type="checkbox"/>		Overrides to NREC complexity factor and Propul:	8
Propulsion, Ground Station and OM Mods	<input type="checkbox"/>		Overrides to NREC complexity factor and Propul:	11



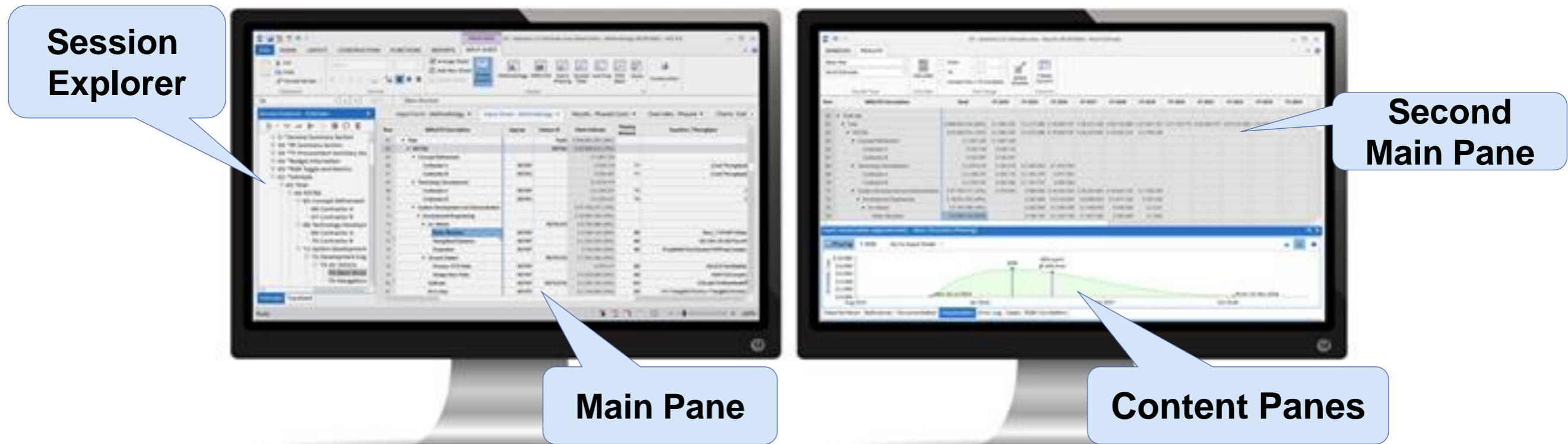


ACE 8.0 Helps Experienced Users

- Experienced Model Builders have built estimates with ACE
- Experienced users utilize ACE to produce quality estimates and to be more productive

Configurable Workspace

Tailor Workspace to your needs: Arrange panes on multiple monitors



Open **multiple instances** of ACE to easily compare model results

Enhanced User Experience

New capabilities promote efficiency

- Drag and drop rows between panes
- Use Equation Auto-Complete within the Input Sheet
- View information in Input Sheet and References simultaneously
- Arrange Panes and Zoom
- Right-click menus

The screenshot displays the ACET software interface with several panes open. The main pane shows a spreadsheet with columns for Row, WBS/CES Description, Approp, Unique ID, Point Estimate, Phasing Method, Equation / Throughput, Fiscal Year, Units, Start Date, Finish Date, and Summary Result Type. A 'Session Explorer - Estimate' pane on the left shows a hierarchical tree of project sections. A 'References - Rows used by Procure OTS Parts' pane at the bottom shows a smaller version of the spreadsheet data. A callout box highlights a cell containing the equation $GSUCS * GndStatQty$ with a value of 450 and a result of \$ 488.108. A 'Zoom' callout points to the bottom right corner of the interface, and an 'Arrange Panes' callout points to the pane management icons.

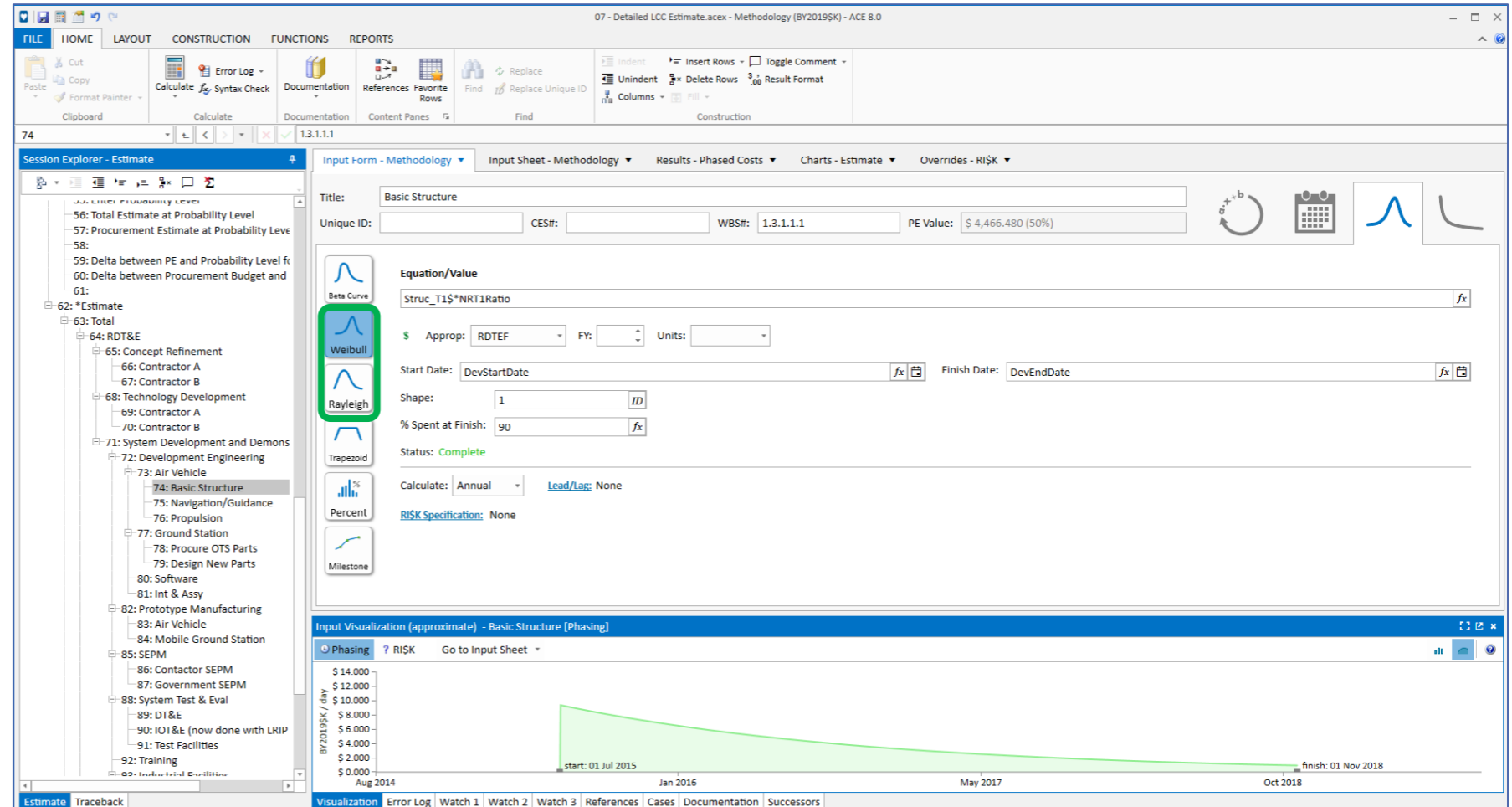
Row	WBS/CES Description	Approp	Unique ID	Point Estimate	Phasing Method	Equation / Throughput	Fiscal Year	Units	Start Date	Finish Date	Summary Result Type
74	Basic Structure	RDTEF		\$ 4,506.110	BE	Struc_T1\$*NRT1Ratio			DevStartDate	DevEndDate	
75	Navigation/Guidance	RDTEF		\$ 1,532.524	BE	425.555+25.555*NavWt	1997	\$K	DevStartDate	DevEndDate	
76	Propulsion	RDTEF		\$ 716.954	BE	propMnth\$*DevDuration*NRPropComplex			DevStartDate	DevEndDate	
77	Ground Station		RDTEGSS	\$ 7,503.106							
78	Procure OTS Parts	RDTEF		\$ 976.217	BE	GSUCS*GndStatQty			rtDate,0,0,120	StartDate,0,30	
79	Design New Parts	RDTEF		\$ 6,526.889	BE			\$K	rtDate,0,0,120	StartDate,0,30	
80	Software	RDTEF	RDTEWS	\$ 3,283.755	MS	SWLat			WDevStartDate	WDevEndDate	
81	Int & Assy	RDTEF		\$ 2,138.804	BE	.15*(Ttot(@RDTEAVS))			DevEndDate,-1	DevEndDate	
82	Prototype Manufacturing			\$ 3,334.891							
83	Air Vehicle	RDTEF		\$ 2,971.860	BE	1.5*AV_T1\$			ProtoStartDate	ProtoEndDate	
84	Mobile Ground Station	RDTEA		\$ 363.031	BE	1.75*TGS_T1\$			ProtoStartDate	ProtoEndDate	
85	SEPM			\$ 21.741							
86	Contractor SEPM	RDTEF		\$ 10.091	FP	ContLab\$*ContStaffQty			DevStartDate	DevEndDate	
87	Government SEPM	RDTEF		\$ 11.651	FP	GovtLab\$*GovtStaffQty			startDate,0,-21	DevEndDate	
88	System Test & Eval			\$ 16,047.201							
89	DT&E	RDTEF		\$ 9,282.687	%		8000	2010			\$K
90	IOT&E (now done with LRIP article)	RDTEF		\$ 6,416.413	%	act*(Ttot(@RDTEAVS))+Ttot(@RDTEGSS))					
91	Test Facilities	RDTEF		\$ 348.101	BY	[Cost Throughput]	2010	\$K			
92	Training	RDTEF		\$ 2,120.323	W		2000	2016	\$K	DevStartDate	DevEndDate
93	Industrial Facilities			\$ 15,084.366							
94	Construct/Converts/Expans	RDTEF	DTEConst\$	\$ 11,603.359	BE		10000	2010	\$K	DevStartDate	DevEndDate
95	Equip ACQ/Modern (Govt Owned,	RDTEF		\$ 3,481.008	FP	.3*RDTEConst\$					
96	Other Government Costs	RDTEF		\$ 1,473.441	TY	[Cost Throughput]					\$K

Row	WBS/CES Description	Approp	Unique ID	Equation/Value	Result	Fiscal Year	Units	Used In	
209	Ground Station Unit Cost	RDTEF	GSUCS		450	\$ 488.108	2014	\$K	Equation / Throughput
213	Number of Ground Stations		GndStatQty		2	2			Equation / Throughput
171	Development Start Date		levStartDate		01Jul2015	01JUL2015			Start Date

More Built in Phasing Methods

Weibull and Rayleigh Phasing methods added to 8.0

- Weibull: shape and % Spent at Finish
- Rayleigh: % Spent at Finish



View Phasing with Input Visualization

Add Custom Columns to the Session

Supports more complex estimating scenarios

- Additional calculation columns
- Specify text to categorize session rows then sum/filter results
- Store data from Plugins
- Create additional comment columns

Row	WBS/CES Description	Comments	Approp	Unique ID	Point Estimate	Phasing Method	Equation / Throughput
64	Total			Total\$	\$ 902,561.337		
65	RDT&E			RDTES	\$ 60,672.479		
66	Concept Refinement				\$ 1,058.240		
67	Contractor A				\$ 531.150	TY	[Cost Throughput]
68	Contractor B				\$ 527.090	TY	[Cost Throughput]
69	Technology Development				\$ 4,710.518		
70	Contractor A				\$ 2,355.259	TC	2.C
71	Contractor B				\$ 2,355.259	TS	2.C
72	System Development				\$ 54,903.721		
73	Development Engineering				\$ 17,326.751		
74	Air Vehicle			TEAVS	\$ 6,665.445		
75	Basic Structure				\$ 4,427.036	BE	Struc_T1\$ * NRT1Ratio
76	Navigation				\$ 1,534.036	BE	425.555 + 25.555 * NavWt
77	Propulsion				\$ 704.373	BE	PropMnth\$ * DevDuration * NRPropComplex
78	Ground Station			TEBSS	\$ 7,986.468		
79	Procurement				\$ 965.726	BE	GSUCS * GndStatQty
80	Design				\$ 7,020.742	BE	4500 * GSComplex
81	Software			FEWWS	\$ 477.051	MS	SWLab\$ * SWManMonths * SWComplex
82	Int & Assy				\$ 2,197.787	BE	.15 * (TTOT(@RDTEAVS) + TTOT(@RDTEGSS))
83	Prototype Manufacturing				\$ 3,280.499		

Row	WBS/CES Description	Result	Used In
65	RDT&E	\$ 60,672.479	Child
98	Procurement	\$ 402,552.968	Child
138	Operations & Support	\$ 439,335.890	Child

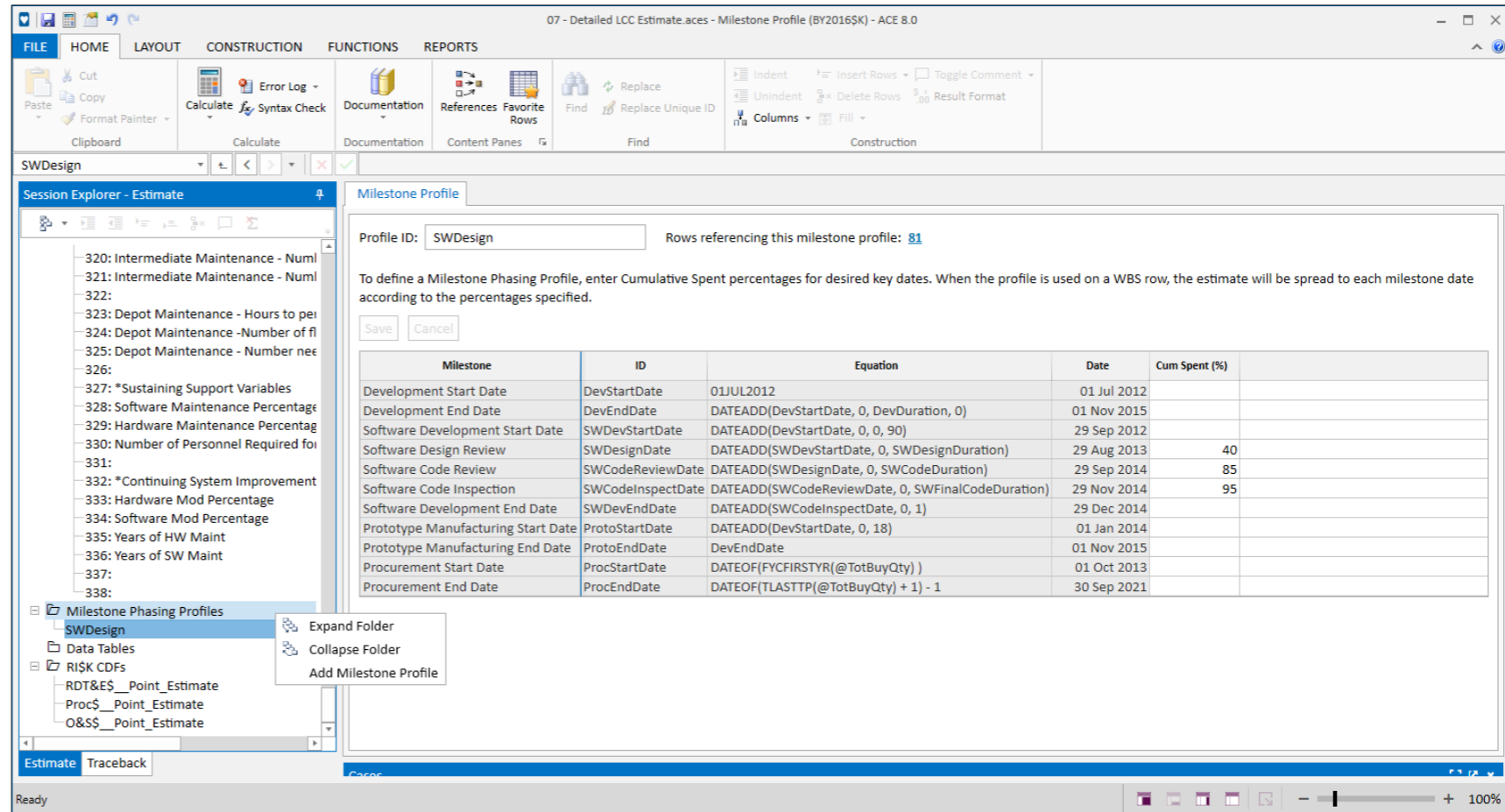
Combines DEC's and Category Columns

Easier Access to Advanced Model Content

New Session Folders

- Milestone Phasing Profiles
- Data Tables
- RI\$K CDFs

- Quickly add new profiles and access them from estimating rows



07 - Detailed LCC Estimate.aces - Milestone Profile (BY2016\$K) - ACE 8.0

FILE HOME LAYOUT CONSTRUCTION FUNCTIONS REPORTS

Clipboard Calculate Documentation Content Pages Find

Session Explorer - Estimate

Milestone Profile

Profile ID: SWDesign Rows referencing this milestone profile: 81

To define a Milestone Phasing Profile, enter Cumulative Spent percentages for desired key dates. When the profile is used on a WBS row, the estimate will be spread to each milestone date according to the percentages specified.

Save Cancel

Milestone	ID	Equation	Date	Cum Spent (%)
Development Start Date	DevStartDate	01JUL2012	01 Jul 2012	
Development End Date	DevEndDate	DATEADD(DevStartDate, 0, DevDuration, 0)	01 Nov 2015	
Software Development Start Date	SWDevStartDate	DATEADD(DevStartDate, 0, 0, 90)	29 Sep 2012	
Software Design Review	SWDesignDate	DATEADD(SWDevStartDate, 0, SWDesignDuration)	29 Aug 2013	40
Software Code Review	SWCodeReviewDate	DATEADD(SWDesignDate, 0, SWCodeDuration)	29 Sep 2014	85
Software Code Inspection	SWCodeInspectDate	DATEADD(SWCodeReviewDate, 0, SWFinalCodeDuration)	29 Nov 2014	95
Software Development End Date	SWDevEndDate	DATEADD(SWCodeInspectDate, 0, 1)	29 Dec 2014	
Prototype Manufacturing Start Date	ProtoStartDate	DATEADD(DevStartDate, 0, 18)	01 Jan 2014	
Prototype Manufacturing End Date	ProtoEndDate	DevEndDate	01 Nov 2015	
Procurement Start Date	ProcStartDate	DATEOF(FYFIRSTYR(@TotBuyQty))	01 Oct 2013	
Procurement End Date	ProcEndDate	DATEOF(TLASTTP(@TotBuyQty) + 1) - 1	30 Sep 2021	

Estimate Traceback

Ready

New Data Tables

New separate data tables

- Three Table Types
 - FY Independent
 - FY Dependent
 - Vectors
- Create tables of any size without adding more rows or Fiscal Years to the session
- Reference Tables with Unique IDs and Matrix Equations

The screenshot shows the ACEIT software interface. The main window is titled 'Data Table (BY2016\$K) - 07 - Detailed LCC Estimate.aces - ACE 8.0'. The 'New Table' dialog is open, showing the following configuration:

- Name: Manpower Costs
- Unique ID: Man\$
- Type: FY Independent
- Rows: 9
- Columns: 3
- Is Cost:
- Input Cost Type: BY
- Approp: OMA
- Units: \$K
- Base Year: 2016

Below the dialog, a table is displayed with the following data:

WBS/CES Description	Average Basic Pay	Annual DOD Composite Rate	Annual Rate Billable to Other Federal Agency
E9	65	75	72
E8	60	70	69
E7	55	65	64
E6	50	60	59
E5	45	55	53
E4	40	50	48
E3	35	45	46
E2	33	40	40
E1	30	40	40

At the bottom, a 'References' table is shown with the following structure:

Row	WBS/CES Description	Unique ID	Equation	Result	Used In

Faster Results through Incremental Calculation

New calculation options can save time by calculating the session smartly

- Calculate – Incremental model calculations
- Full Calculate – Complete calculation of the session
- Calculate RI\$K – Full Calculate with RI\$K simulation

The screenshot displays the software's ribbon interface with the 'INPUT SHEET' tab selected. The 'Calculate' dropdown menu is open, showing the following options and their keyboard shortcuts:

- Calculate (F9)
- Calculate RI\$K (Ctrl+Shift+F9)
- Calculate CAIV
- Full Calculate (Ctrl+Alt+F9)
- Select Cases... (Shift+F9)
- Calculate All Cases (Alt+F9)
- Full Calculate All Cases
- Clear Results

The background shows a 'Session Explorer' on the left with a tree view containing items like '63: Total' and '64: RDT&E'. The main window displays a table with columns: 'WBS/CES Description', 'Comments', 'Approp', 'Unique ID', and 'Point Estimate'. The table contains data for 'Total\$' and 'RDTE\$'.

WBS/CES Description	Comments	Approp	Unique ID	Point Estimate
			*Estimate	
			Total\$	\$ 904,459.331 (86%)
			RDTE\$	\$ 62,952.687 (13%)
				\$ 1,058.427

Manage Documentation

- Shows all the documentation across the session
- Replaces the Keywords workscreen
- Lists all definitions, shows associated rows, counts the number of references and provides a preview
- Add Attached Documents

Reference Count	Rows	Type	Content
1	209	User	Air Vehicle AUC: Calculates the average unit cost of...e maintenance costs.
2	257,258	User	Hardware/Software Mod Percentage: These constant inp...m improvement
2	259,260	User	Years of HW/SW Maint: These constant inputs are used...m improvement cc
1	90	User	The MatTotTot function uses the data tables ArmyLab\$...of the Session Expl
1	25	User	The Milestone Phasing profile "SWDesign" used in this...of the Session Explo
1	48	User	StepVal function works similar to HLookUp in Excel. T...y yearly buy quantity.
1	51	User	Ground Station LRIP Support (AF): This row uses ACE'... as our finish year.
2	52,74	User	This row is calculated by multiplying the unit cost f... for more information.
1	2	Attachment	ACEIT 101 75 CARD.docx

Tailor Standard Reports Quickly

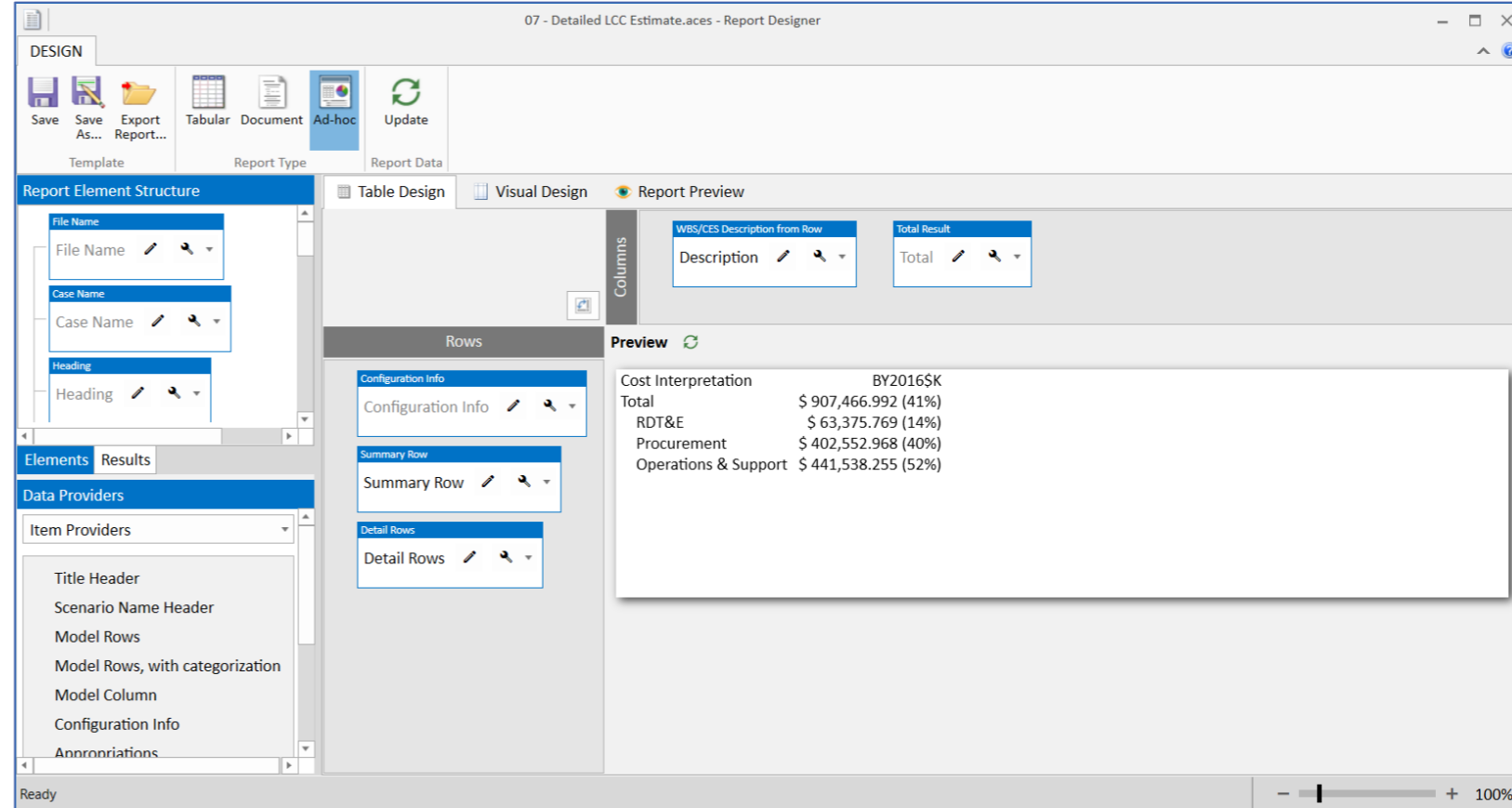
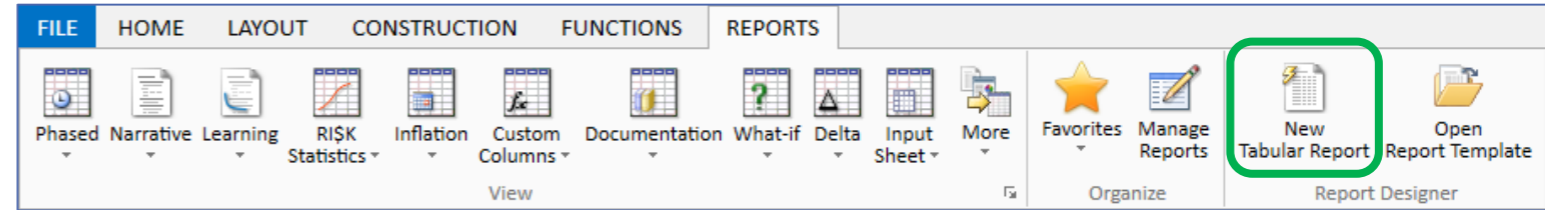
- Report Settings controls basic report parameters
 - Change settings
 - Press refresh
 - Save the new report template

The screenshot displays a software window titled "06 - Implementing O&S Estimating Methods.acex - BY Phased Costs (all rows) - BY 2019\$K, Point Estimate". The main area shows a table with columns for "WBS/CES Description", "Approp", "Total", and "FY 201". The table lists various budget items and their associated costs. To the right, a "Report Settings" dialog box is open, showing fields for "Report Name" (BY Phased Results) and "Report Title" (%CostType% Phased %ResultsType% (all rows)). The dialog also has sections for "Cost Type" (set to Obligation), "RI\$K", "Case", "Configuration Info", "Rows", "Categorize", "Columns", "Phased Values", and "Formats". A green callout bubble with the text "Refresh Report View" points to a refresh icon in the dialog box.

WBS/CES Description	Approp	Total	FY 201
1 *EXAMPLE FILE*			
2 *Budget Information			
3 Procurement Budget		\$ 422,569.066	
4 Air Force Aircraft (APF) Budget	APF	\$ 280,632.822	
5 Army Aircraft (APA) Budget	APA	\$ 141,936.244	
6			
7 *Estimate			
8 Total		\$ 904,357.656	\$ 1,874.3
9 RDT&E		\$ 62,851.012	\$ 1,874.3
10 Concept Refinement		\$ 1,058.427	\$ 1,058.4
11 Contractor A	RDTEF	\$ 532.172	\$ 532.17
12 Contractor B	RDTEA	\$ 526.255	\$ 526.25
13 Technology Development		\$ 4,637.328	\$ 441.16
14 Contractor A	RDTEF	\$ 2,318.664	\$ 179.12
15 Contractor B	RDTEA	\$ 2,318.664	\$ 262.03
16 System Development and Demonstration		\$ 57,155.257	\$ 374.79
17 Development Engineering		\$ 19,508.162	
18 Air Vehicle		\$ 6,696.175	
19 Basic Structure	RDTEF	\$ 4,466.480	
20 Navigation/Guidance	RDTEF	\$ 1,519.046	
21 Propulsion	RDTEF	\$ 710.649	
22 Ground Station		\$ 7,437.118	
23 Procure OTS Parts	RDTEF	\$ 967.631	
24 Design New Parts	RDTEF	\$ 6,469.487	
25 Software	RDTEF	\$ 3,254.875	
26 Int & Assy	RDTEF	\$ 2,119.994	
27 Prototype Manufacturing		\$ 3,305.561	
28 Air Vehicle	RDTEF	\$ 2,945.723	

Customize Reports with Report Designer

- Create your own tables
- Drag and drop elements to specify rows and columns content
- Save and export the tables to create larger reports





ACE 8.0 Helps Reviewers

- Model Reviewers primarily need to understand existing models and audit them for consistency and sound practices
- Reviewers use ACE to quickly understand a model and focus the review on high impact items

Understand the Model

Review the session information before diving deeper into the model

- Review session metrics
- Scan documentation
- Check documentation across the model

The screenshot displays the ACE 8.0 software interface with the following components:

- Info Panel:** Contains sections for Introduction, Conclusion, Documentation Review (highlighted with a green box), Session Protection, and Gain Ownership.
- Session Properties:** Lists details such as Program Name (UAV Demo), Base Year (2019), Units (Thousands), Currency (\$), First Year (2014), Last Year (2036), Default Case (Point Estimate), System Inflation Table (US Government Indices for FY 2018), and Custom Inflation Table (none).
- Session Metrics:** (highlighted with a green box) Shows Last Saved (05Feb2019 13:21:18), Rows (260), Years (23), Cases (2), User-Created Custom Columns (3), Rows Containing (RISK Specifications: 0, WBS Definitions: 19, Equation/Throughput Definitions: 57), Documentation File Size (122 KB), and Attached Documents File Size (0).
- Documentation Review:** (highlighted with a green box) Features two pie charts: "WBS Definitions" and "Methodology Definitions". The WBS chart shows 140 rows without documentation (95%), 8 with system documentation (5%), and 8 with user documentation (5%). The Methodology chart shows 143 rows without documentation (97%), 5 with system documentation (3%), and 5 with user documentation (3%).
- All Documentation:** A table listing documentation items with columns for Reference Count, Rows, Type, and Content. The first row is highlighted in blue.

Reference Count	Rows	Type	Content
1	45	User	MANUFACTURING - This element includes the costs of ma... the final system.
2	53,75	User	This is just a fixed cost per year (\$3M for AF and \$4...t date for the row.
2	54,76	User	This is broken in three rows so spares are bought for...hicle Basic Structure.
4	49,57,67,79	User	This row for both Army and Air Force is a simple unit...ction of the estimate.
2	58,80	User	This row is calculated by multiplying a time-phased f...he finish date column.
2	59,81	User	SYSTEM ENGINEERING/PROGRAM MANAGEMENT - The system en...hasing methc
2	59,81	User	DEVELOPMENT COST FACTOR - System/Project Management (... 600 300,000
1	60	User	OTHER - This element includes any funded costs not in...and liabilities.
1	60	User	These are constant costs that occur every year of pro... year of procurement.
1	46	User	AIR VEHICLE - The air vehicle element refers to the c...omplete air vehicle.
1	70	User	This row is calculated simply as the hardware unit co...quantity (ArmyGSQty).
1	71	User	This row is calculated as the vehicle unit cost (GSTV... quantity (ArmyGSQty).
1	72	User	This row is calculated as a factor of the vehicle cos...ction of the estimate.
4	47,55,65,77	User	R phasing is used for learning curves. This row estim...earning Input Sheet.
1	147	User	User...Air Vehicle Basic Structure, Maintenance/Guidance, R, R...solution custom...

Quickly Access a Variety of Result Views

View phased, total, uncertainty or allocated results in BY, TY, or SY \$

Input Form - Methodology ▼		Input Sheet - Methodology ▼		Results - Phased Costs ▼		
Row	WBS/CES Description	Total	FY 2011	FY 2012	FY 2013	FY 2014
63	*Estimate					
64	Total	\$ 907,466.992	\$ 8,812.812	\$ 7,267.761	\$ 13,578.674	\$ 36,136.151
65	RDT&E	\$ 63,375.769	\$ 8,812.812	\$ 7,267.761	\$ 13,578.674	\$ 18,074.491
66	Concept Refinement	\$ 1,058.240	\$ 1,058.240			
67	Contractor A	\$ 531.150	\$ 531.150			
68	Contractor B	\$ 527.090	\$ 527.090			
69	Technology Development	\$ 4,710.518	\$ 266.172	\$ 1,250.306	\$ 1,067.636	\$ 285.600
70	Contractor A	\$ 2,355.259		\$ 57.371	\$ 171.485	\$ 285.600
71	Contractor B	\$ 2,355.259	\$ 266.172	\$ 1,192.935	\$ 896.151	

Input Sheet - Methodology ▼		Results - RISK Statistics ▼			Charts - Estim			
Rate	Mean	Std Dev	CV	5%	10%	15%		
(38%)	\$ 56,214.	\$ 14,910.	0.2652	\$ 35,603.	\$ 38,987.	\$ 41,571.		
	\$ 35,166. (48%)	\$ 36,848.	\$ 9,524.	0.2585	\$ 23,471.	\$ 25,801.	\$ 27,393.	
	Air Vehicle	\$ 30,579. (46%)	\$ 32,560.	\$ 8,382.	0.2574	\$ 20,884.	\$ 22,839.	\$ 24,218.
	Integration & Test	\$ 4,587. (64%)	\$ 4,287.	\$ 1,361.	0.3175	\$ 2,380.	\$ 2,697.	\$ 2,927.
	SEPM	\$ 13,011. (28%)	\$ 17,520.	\$ 6,808.	0.3886	\$ 8,701.	\$ 9,865.	\$ 10,868.
	Program Office Costs	\$ 1,841. (50%)	\$ 1,846.	\$ 638.	0.3458	\$ 794.	\$ 1,022.	\$ 1,179.

Review Model Consistency in Reports

Refresh Report View

Report Settings

Report Name: BY ACE Narrative (Selected Rows)
Report Title: Detailed Basis of Estimate (BY)

Cost Type
RISK
Case
Rows
Filter
Layout

Attachments
 Fiscal Year Phasing Results
 Phasing Methodology
 Estimating Methodology
 Cost Adjustments
 Learning Curve Parameters
 Variables

Detailed Basis of Estimate (BY)

Row 50 Integration & Test (AF) \$ 23,621.164 BY2019SK

A. Fiscal Year Phasing Results (BY2019SK)

FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024
\$ 285.001	\$ 261.668	\$ 247.556	\$ 237.181	\$ 3,251.852	\$ 5,052.459	\$ 9,617.976	\$ 4,667.471

Total
\$ 23,621.164

B. Phasing Methodology (Yearly Factor/Inputs)

C. Estimating Methodology (Equation/Throughput Calculated Yearly and Summed)
0.15*AF_AV\$

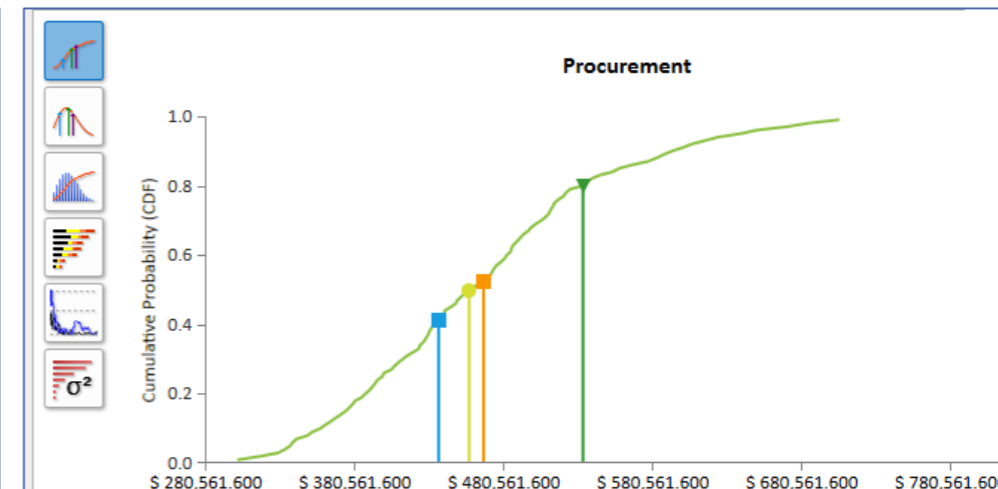
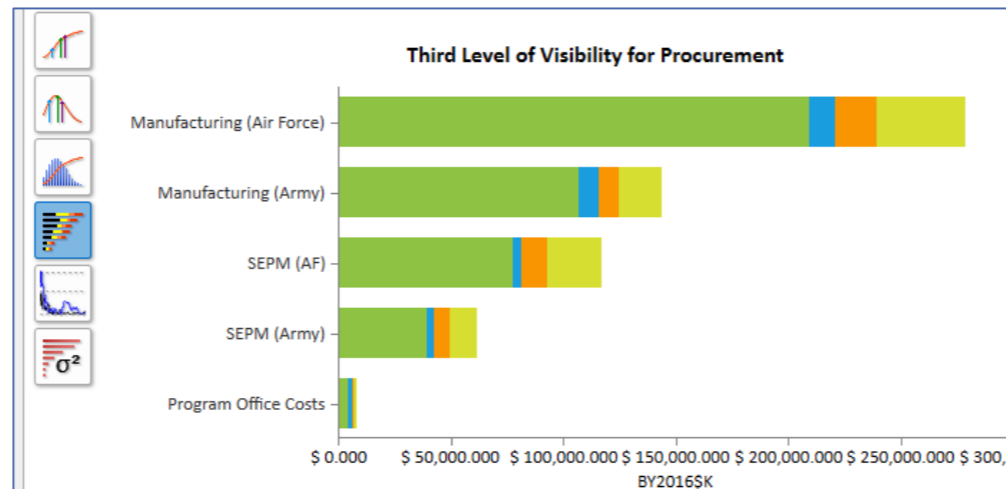
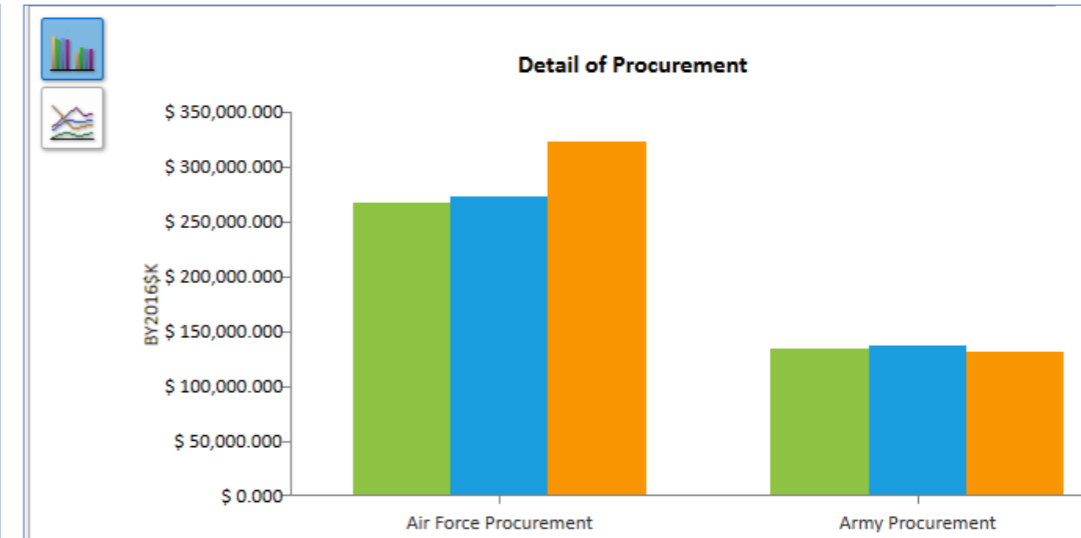
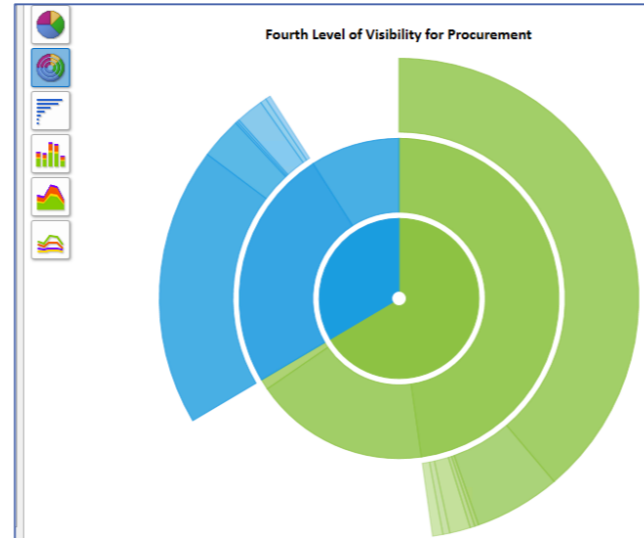
C.1 Methodology Rationale
This is our standard program office integration factor.

Create and Tailor Narrative Reports

- Select from template
- Use settings to adjust the template
- Refresh the Report
- Review modeling methods and documentation

Quickly Generate Charts to Understand Results

- Estimates
 - One case - multiple views
- Case Comparative
 - Two or more cases
- Uncertainty
 - CDF
 - PDFs
 - Contributors
- Analysis

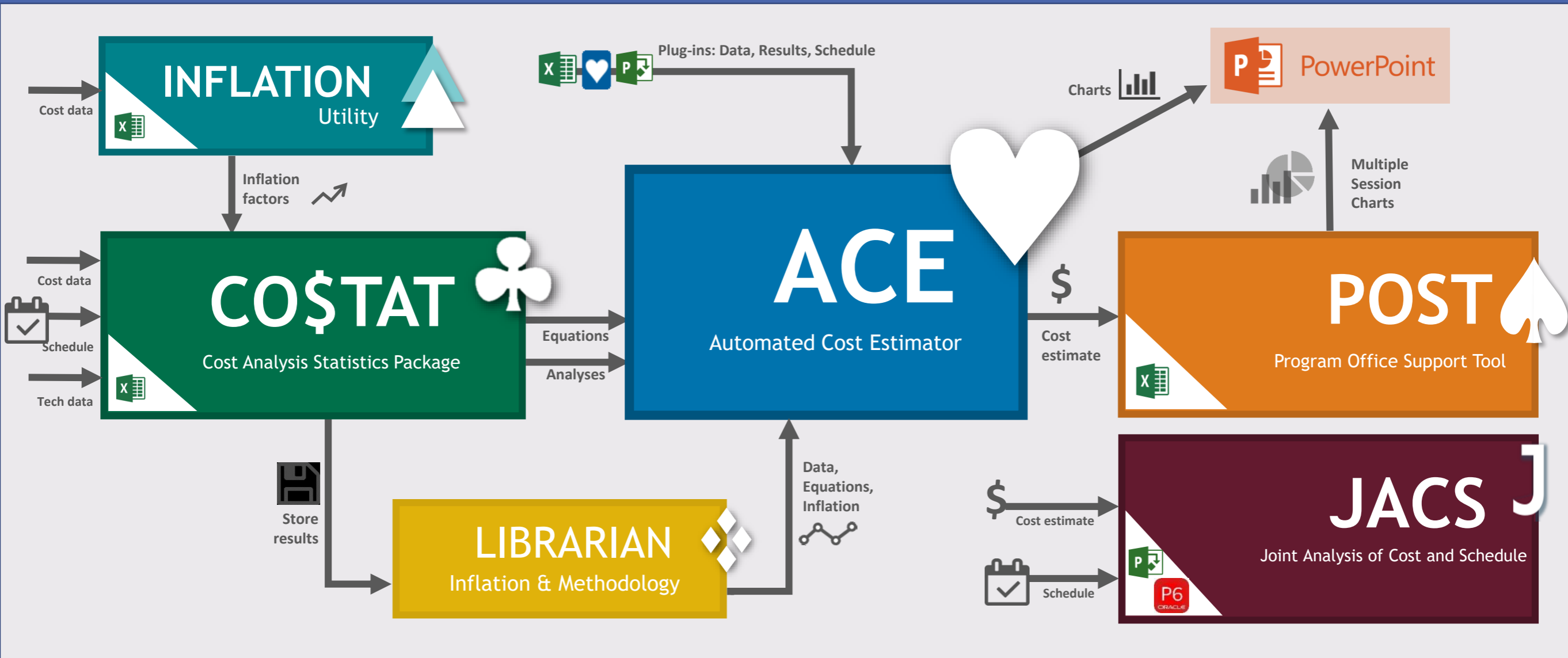




New ACEIT Architecture

- Revised Architecture to better show how cost, schedule and technical data flow through the ACEIT applications

ACEIT 8.0 Architecture





ACE 8.0 Educational Resources

- Several products available to assist with the transition to 8.0

Transitioning Resources



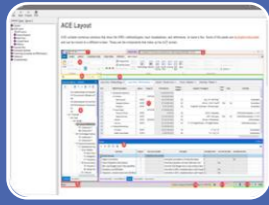
Transitioning Flyer

- Compares 7.5 to 8.0
- Download at aceit.com



Release Notes

- Summarizes development
- Download aceit.com



Help Text

- Updated for ACE 8.0
- Available in software



Help Desk

- Email ACEIT_support@tecolote.com
- Call: 805-964-6963



Webinars

- Army Road Show
- We will schedule more



Monthly eNews

- Distributed via email
- ACEIT.com archives



New Web Help

- How-To style articles
- ACEIT.com User Resources



Training Classes

- Learn from Expert Instructors
- Classes Available

ACEIT 8.0 Training

Instructors, possessing real-world experience with ACEIT, provide hands-on training



Courses

ACEIT for Model Builders	4 days
ACEIT for Reviewers	2 days
ACEIT for Advanced Model Builders	4 days
ACEIT for CER Developers: CO\$TAT	2 days
ACEIT for Schedules: JACS	2 days

More Information

- Visit www.ACEIT.com
- Please contact ACEIT Support
Email: aceit_support@tecolote.com
Phone: (805) 964-6963