




Deltek

Deltek Acumen 8.8

Quick Start Guide

October 7, 2022



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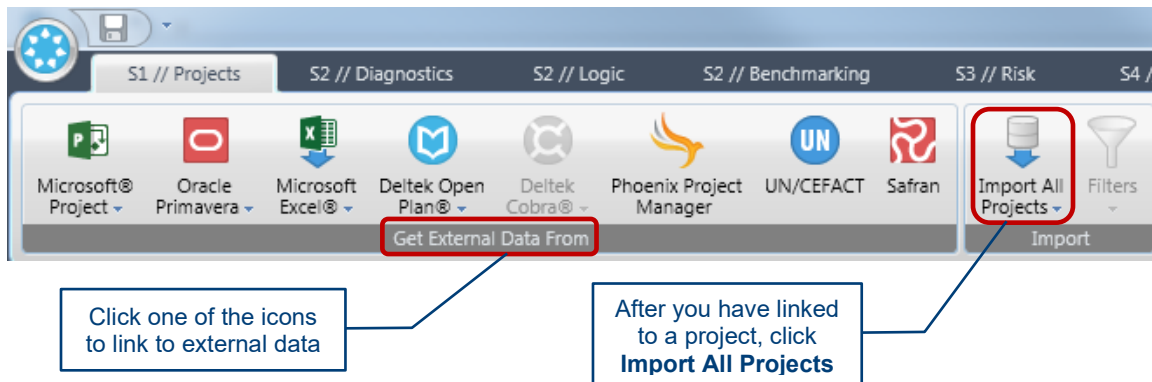
Contents

Deltek Acumen Fuse Quick Start Guide	1
Import Schedule or Cost Data	1
Set Up and Run Analysis.....	1
Metric Analysis.....	2
Run Logic Integrity Checks.....	4
Get a High Level Overview.....	4
Compare Differences and Pinpoint Changes	5
Create and Edit Metrics	6
Deltek Acumen Risk Quick Start Guide	7
Import Schedule or Cost Data	7
Apply Uncertainty	7
Add Risk Events	9
Run Risk Analysis.....	10
View the Risk Exposure Report.....	10
View the Risk Drivers Report.....	11
Risk Mitigation	11
Cost Risk from a Cost Loaded Schedule	12
Cost Risk	13
Integrated Cost / Schedule Risk Analysis	13

Deltek Acumen Fuse Quick Start Guide

Import Schedule or Cost Data

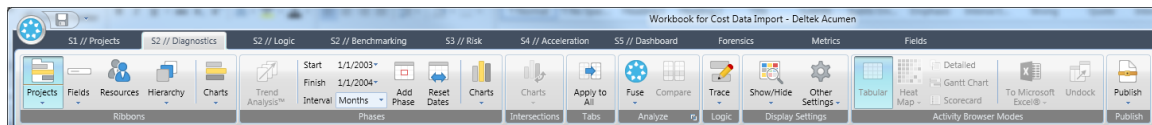
On the S1 // Projects tab, use the Get External Data menu to set up the Acumen workbook by linking to single or multiple schedules, cost estimates, or risk models. You can import baseline schedules or project snapshots as well.



Note: If you need specific metrics, like the DCMA DECM metrics, make sure you select them in the Acumen Options dialog box before creating your workbook, or import them from the Metrics tab.

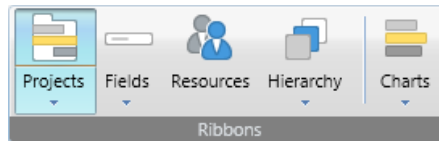
Set Up and Run Analysis

On the S2 // Diagnostics tab, set up your analysis by selecting the grouping and time phases you want to see. In the Analyze menu, click **Fuse** to run the analysis. Change the activity browser view or publish the results to a report.

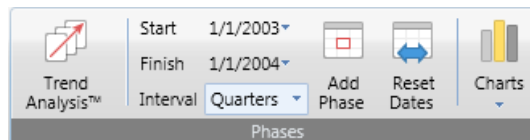



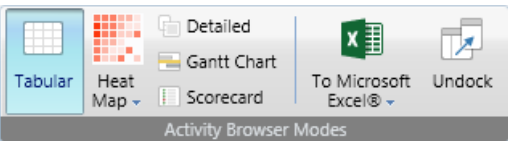
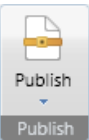
S2 // Diagnostics Tab Options

Grouping Options



Phase Options

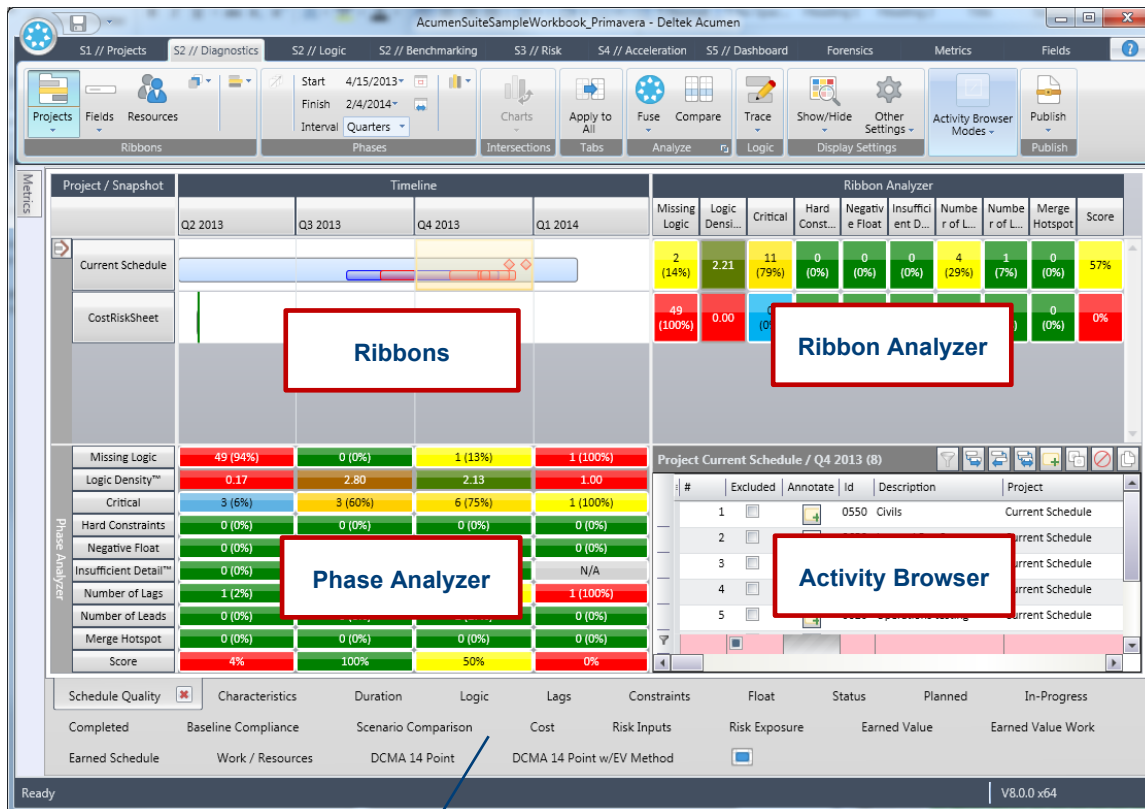


S2 // Diagnostics Tab Options	
Fuse Analysis	 Fuse
Activity Browser Options	 Activity Browser Modes
Reporting Options	 Publish

Metric Analysis

- Ribbon Analyzer — View metric results for individual activity groupings.
- Phase Analyzer — View metric results for individual time phases.
- Activity Browser — View the activities included in a ribbon, phase, or metric result.

Deltek Acumen Fuse Quick Start Guide



Each tab is a pre-defined ribbon view

Run Logic Integrity Checks

Use the S2 // Logic tab to identify open ends, leads, lags, out of sequence activities, reverse logic, redundant logic, and circular logic. Group results by dragging a column heading to the top or select a column heading by which to sort results.

The screenshot shows the S2 // Logic tab in the Deltek Acumen software. The main window displays the 'Redundancy Index™ - 3 (5%)' results. The interface includes a top navigation bar with tabs for S1 // Projects, S2 // Diagnostics, S2 // Logic (selected), S3 // Risk, S4 // Acceleration, S5 // Dashboard, Forensics, Metrics, and Fields. Below the navigation bar is a toolbar with icons for various logic checks: All, Finish to Start, Finish to Finish, Start to Start, Lags, Leads, Redundancy Index™, Circular Logic, Open Ends, Logic on Summaries, Out of Sequence, Reverse Logic, Open Starts, Open Finishes, Logic Sensitivity™, Logic Trace™, and Publish. The main content area shows a table of results for the 'Redundancy Index™' check. The table has columns for Pred Project, Predecessor ID, Predecessor, Pred Type, Succ Project, Successor ID, Successor, Succ Type, Total Finish Float, Lag, Type, and External. The results are grouped by '1 Year Update'.

Pred Project	Predecessor ID	Predecessor	Pred Type	Succ Project	Successor ID	Successor	Succ Type	Total Finish Float	Lag	Type	External
1 Year Update	20	Review	1 Year Update	18	FEED study	216	-6	FinishToStart			
1 Year Update	55	First Wave	1 Year Update	52	Mechanical	105	-5	FinishToStart			
1 Year Update	55	First Wave	1 Year Update	53	Civils	105	-10	FinishToStart			

Get a High Level Overview

Use the S5 // Dashboard tab to get a high level overview of project status and quality. Click on an image to view the driving activities or additional information.

The screenshot shows the S5 // Dashboard tab in the Deltek Acumen software. The dashboard provides a high-level overview of project status and quality. It includes several charts and metrics:

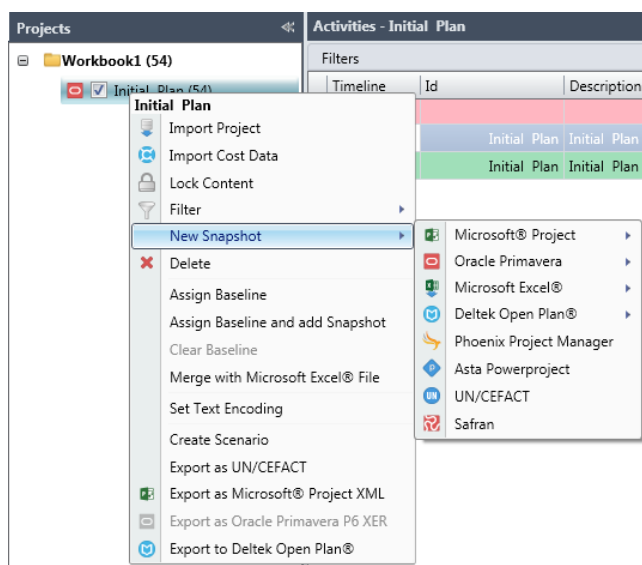
- Logic Quality - 1 Year Update:** A donut chart showing 'FS: 62 (100%)'.
- Activity Type - 1 Year Update:** A donut chart showing the distribution of activity types: Normal (52 (78%)), Summary (11 (16%)), and Milestone (4 (6%)).
- Activity Logic Checks:** A bar chart showing the number of activities with different logic checks: Open Ends (22), Circular Logic (0), Soft Constraints (3), and Hard Constraints (4).
- Relationship Logic Checks:** A bar chart showing the number of relationships with different logic checks: Redundant Logic on y Index™ (3), Summaries (0), Out of Sequence (3), and Reverse Logic (0).
- Activity Status - 1 Year Update:** A bar chart showing the status of activities: Planned (22 (49.7%)), In Progress (0), and Complete (0).

Compare Differences and Pinpoint Changes

Before using the Forensics tab, you must load project snapshots to compare against one another. On the S1 // Projects tab, select the project to which you want to compare. With the project highlighted, use the Get External Data menu or right-click and select **New Snapshot** to add a snapshot for comparison. Once you have loaded all of your snapshots, click the Forensics tab to view variances between them.

Use the Forensics tab menu items to select attributes for Acumen's variance analysis. Publish this view to Excel for a project forensics report. Drag column headings to the top to group results or select a column heading by which to sort results.

1. Load project snapshots.



2. Compare variances.

The screenshot shows the 'Forensics' tab in the Deltek Acumen interface. The 'Analysis' section on the left lists 'Initial Plan', '1 Month Update', and '6 Month Update'. The main table displays a comparison of project snapshots, showing predecessor and successor relationships and their respective dates.

Predecessor ID	Predecessor	Successor ID	Successor	Initial Plan	1 Month Update	6 Month Update
0130	Competitive Analysis	0160	Bid B review	FinishToStart (-10)	FinishToStart (0)	FinishToStart (0)
0160	Bid B review	0190	Commercial review	FinishToStart (-5)	FinishToStart (0)	FinishToStart (0)
0170	Bid A review	0190	Commercial review	FinishToStart (-2)	FinishToStart (0)	FinishToStart (0)
0220	Mechanical design	0210	Civil design	FinishToStart (-30)	FinishToFinish (2)	FinishToFinish (2)
0180	Technical review	0230	Electrical design	FinishToStart (-5)	FinishToStart (0)	FinishToStart (0)
0210	Civil design	0280	Platform FEED	FinishToStart (4)	FinishToFinish (4)	FinishToFinish (4)
0290	Base	0310	Interfaces	FinishToStart (-5)	FinishToStart (5)	FinishToStart (5)
0400	Secondary Long Leads	0390	Outsourced PMO	FinishToStart (10)	FinishToFinish (10)	FinishToFinish (10)
0300	Communications	0400	Secondary Long Leads	FinishToStart (10)	StartToStart (10)	StartToStart (10)
0170	Bid A review	0160	Bid B review	FinishToStart (12)		
0670	Telecoms Design	0220	Mechanical design		FinishToStart (0)	FinishToStart (0)
0230	Electrical design	0670	Telecoms Design		FinishToStart (0)	FinishToStart (0)
0680	Vendor C	0350	Bid reviews			FinishToStart (0)
0370	Vendor B	0680	Vendor C			FinishToStart (0)

Create and Edit Metrics

Use the Metrics tab to create new metrics and edit existing ones. Filter the activities, control accounts, or work packages you want included in each metric by status, type, or time period, and then click the **Add** button to add additional filters and criteria to the metric. Drop-down menus in each Filters column allow you to select fields and functions such as greater than, equal to, less than, and so on.

The screenshot shows the 'Metrics' tab in the Deltak Acumen Fuse application. The interface includes a left-hand navigation pane with categories like 'Schedule Quality', 'Advanced', 'Metrics', 'Variables', 'Project Variables', 'Calculated Fields', 'Control Account Metrics', and 'Work Package Metrics'. The main area displays a metric named 'Missing Logic' with its description, remarks, and various configuration options. Below these are sections for 'Inclusions' (Activity Status, Activity Type, Time Phase, Prorating) and 'Filters'. The 'Filters' section has columns for 'Field', 'Op' (operator), and 'Field or Value'. A formula is entered in the 'Formula' field: $SUM(((NumberOfPredecessors+NumberOfExternalPredecessors=0)*(Start<=_PeriodStart))+((NumberOfSuccessors+NumberOfExternalSuccessors=0)*(Finish<=_PeriodFinish))>0)*1)$. The 'Formula Format' is set to 'Number (no decimals)'. Five numbered callouts point to specific elements: 1. Select filters. (points to the 'Filters' section), 2. Add metric criteria. (points to the 'Add' button), 3. Select field. (points to the 'Field' column), 4. Select function (points to the 'Op' column), and 5. Type in value or select field. (points to the 'Field or Value' column).

1. Select filters.

2. Add metric criteria.

3. Select field.

4. Select function

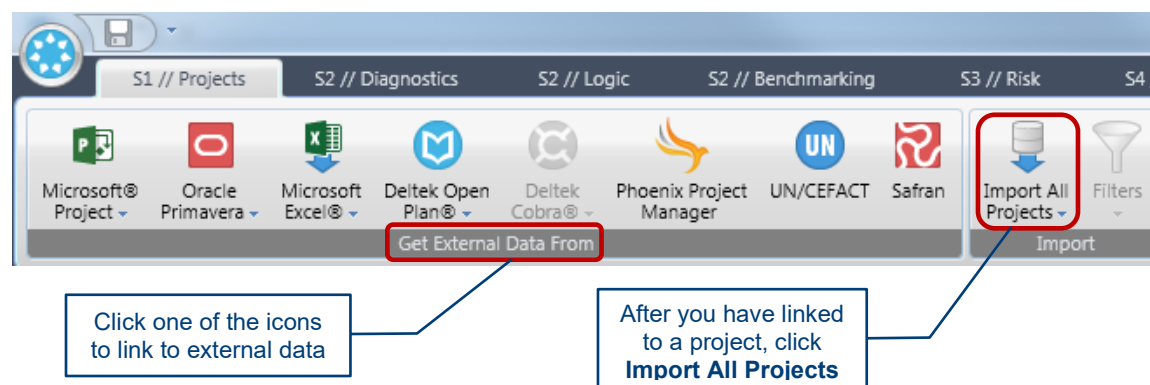
5. Type in value or select field.

Note: For more information about creating your own metrics, see the *Acumen FUSE Metric Developer's guide*.

Deltek Acumen Risk Quick Start Guide

Import Schedule or Cost Data

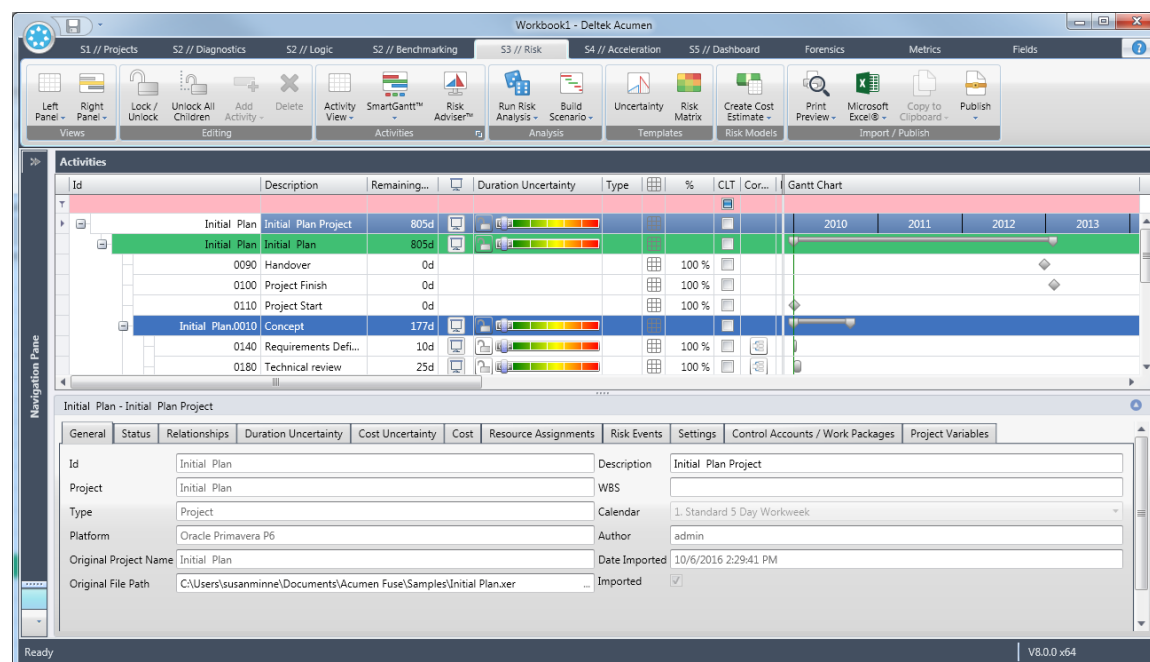
On the S1 // Projects tab, use the Get External Data menu to link to a single project or multiple projects.



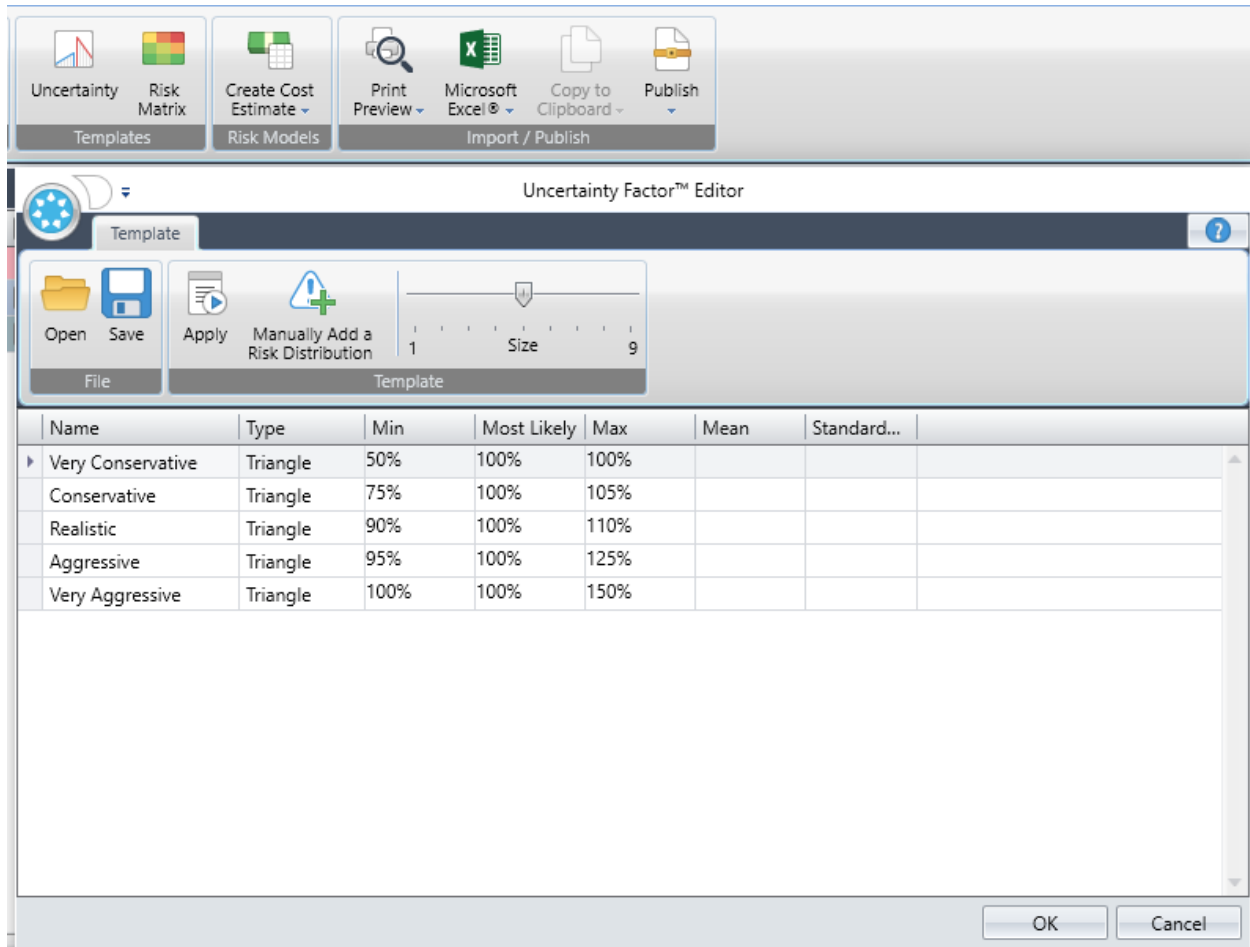
Cost data can come from a cost-loaded schedule or from an Excel spreadsheet using the Acumen template provided.

Apply Uncertainty

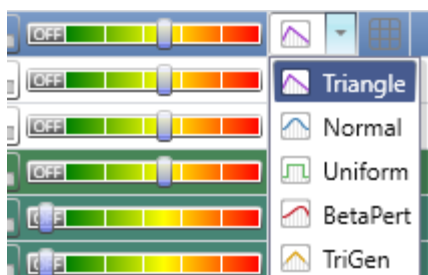
After you have loaded your schedule, you can use the Duration Uncertainty sliders on the S3 // Risk tab to apply duration or cost uncertainty to a single activity or groups of activities. Move the slider left (more conservative) or right (more aggressive) at any hierarchical level. The assignments automatically cascade down to any children.



The values represented by the slider are automatically calibrated to the length of your project. You can see and adjust those values by opening the Uncertainty template.

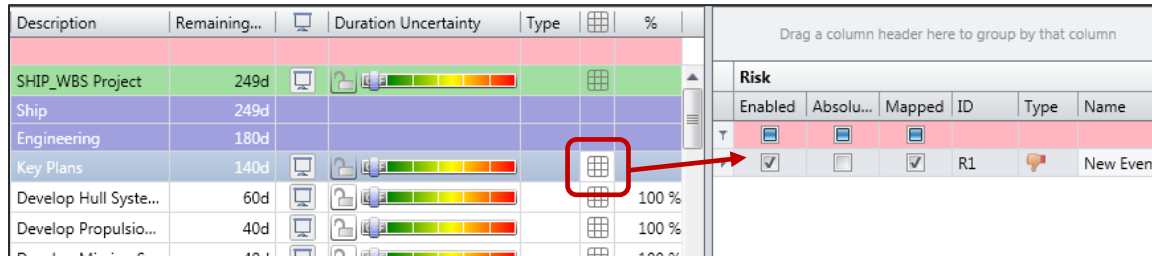


After you have enabled uncertainty for an activity, you can specify the shape of the distribution by clicking on the down arrow in the shape column next to the slider.



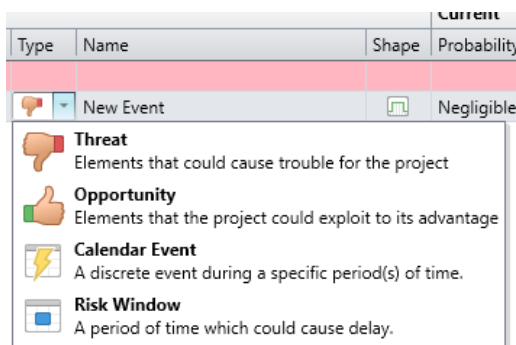
Add Risk Events

Click the matrix icon to the right of the sliders to add a new risk event. The event is mapped automatically to the selected activity or group of activities.

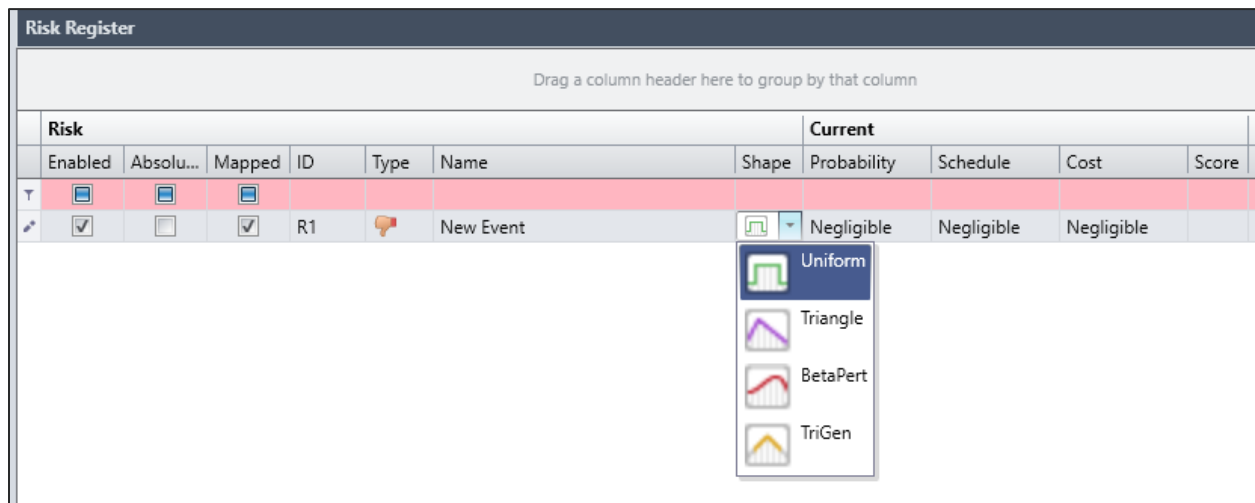


If you already have risks defined, you can import a spreadsheet of risk events using **Import from Microsoft Excel** whenever the risk register is displayed. Acumen provides a template of what the spreadsheet needs to contain.

Risks can be threats, opportunities, calendar events, or risk windows. There is more information on each of these in the online help.



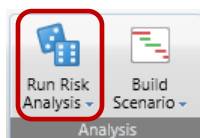
Each risk event also supports various distribution types.



Note: For more information about the risk events, see *Risk Register (Risk Events)* in the Acumen online help: S3 // Risk Tab » Risk Register (Risk Events).

Run Risk Analysis

When you're satisfied with your risk and uncertainty loading, on the S3 // Risk tab, in the Analysis menu, click the **Run Risk Analysis** down-arrow to select the risk analysis/scenario that you want to run.

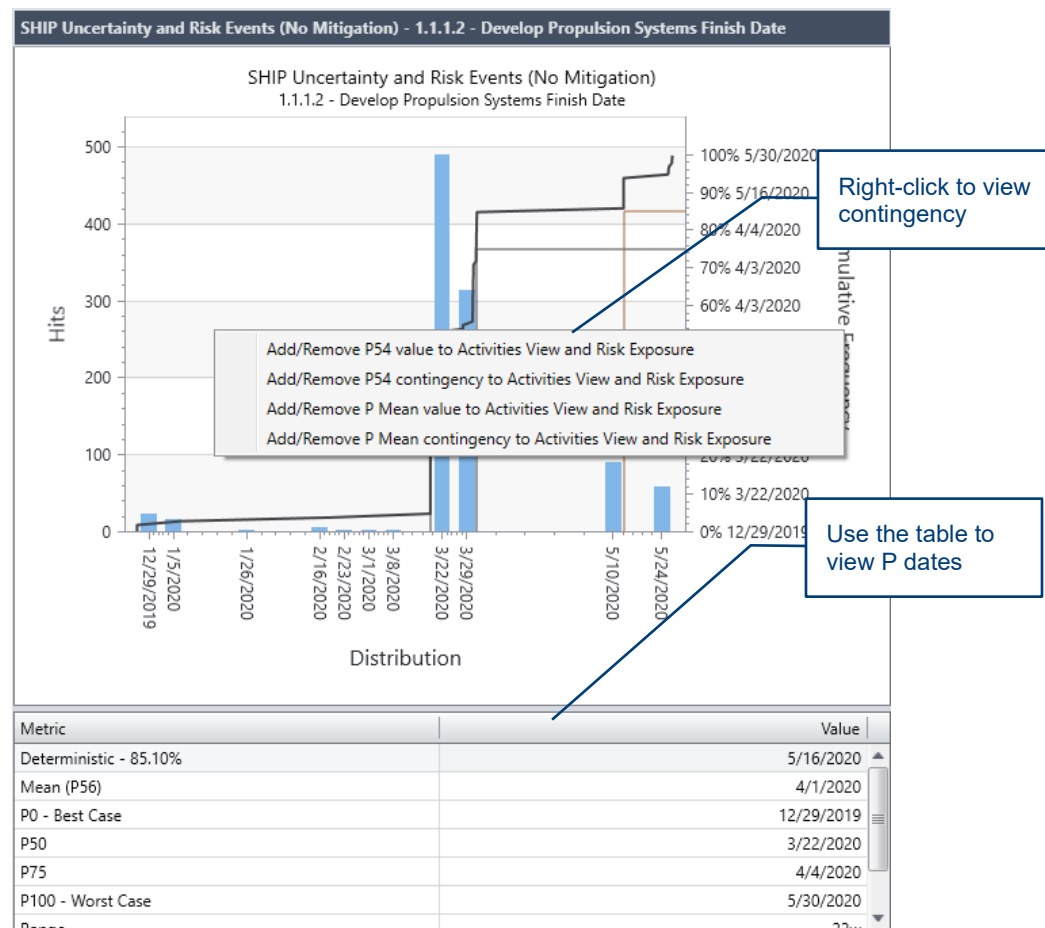


Risk analysis options include:

- Uncertainty Only (no risk events)
- Uncertainty and Risk Events (no mitigation)
- Uncertainty and Risk Events (mitigated, excluding overhead)
- Uncertainty and Risk Events (mitigated, including overhead)

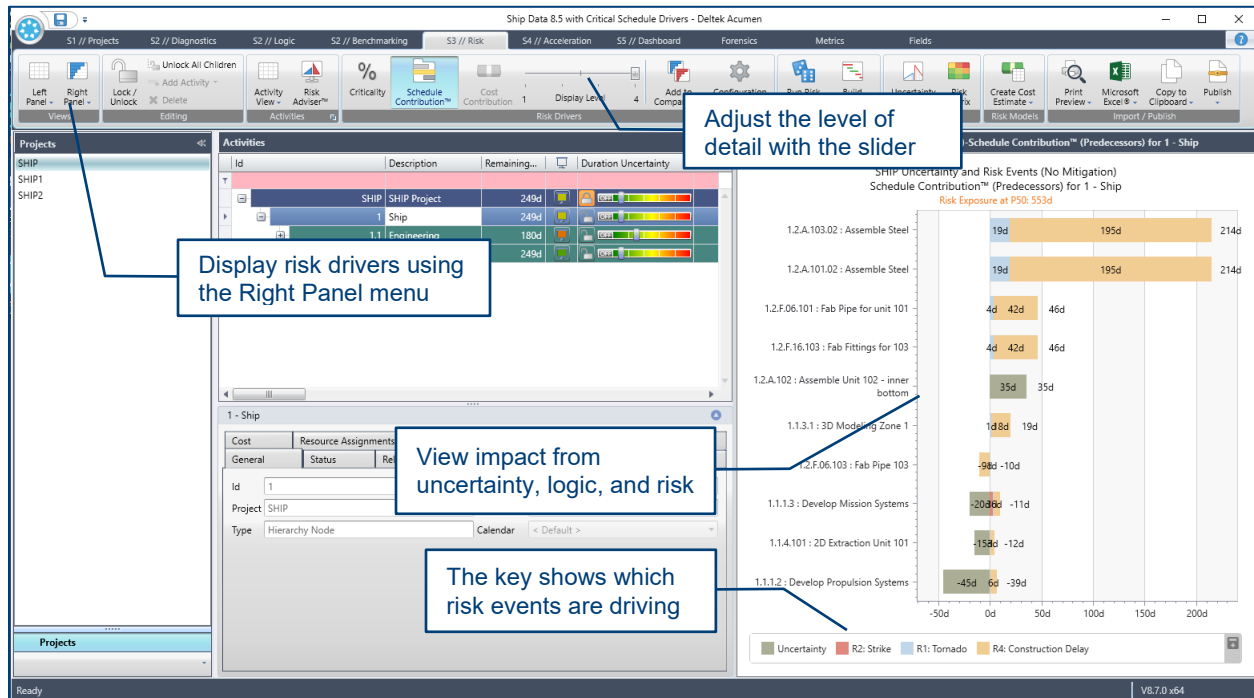
View the Risk Exposure Report

After running the risk analysis, your results display in a histogram in the right panel. Right-click on any confidence level to view contingency. View probabilistic dates in the histogram and chart.



View the Risk Drivers Report

On the S3 // Risks tab, in the View menu, click **Right Panel » Risk Drivers** to view schedule and cost risk drivers. Using the Acumen Risk Contribution Factor™, find out how much impact activities and risk events have on any given milestone or group of activities.



Risk Mitigation

After you have identified risks that are key drivers, you may want to plan to mitigate them and see the impact on the risk analysis. Simple mitigation can be done in the risk register by enabling mitigation and setting the post mitigated probability and impacts.

Risk Register															
Drag a column header here to group by that column															
Risk						Current				Mitigation				Mitigated	
Enabled	Absolu...	ID	Type	Name	Shape	Probability	Schedule	Cost	Score	Enabled	Description	Duration	Cost	Probability	Schedule
<input checked="" type="checkbox"/>	<input type="checkbox"/>	R1		New Event		High	High	High	16	<input checked="" type="checkbox"/>	Mitigate risk	0d	\$0	Medium	Medium

Deltek Acumen Risk Quick Start Guide

Detailed mitigation plans can be built using the Risk Mitigation Steps tab where you can add steps with their own duration and cost to the plan.

After your plan is complete, click **Mitigation Analysis** to see how each individual step affects the outcome.

The screenshot shows the Deltek Acumen Risk Register interface. The top toolbar contains various icons, with 'Mitigation Analysis' highlighted by a red box. The main window displays a 'Risk Register' table with columns for Risk, Current, and Mitigated. Below the main table, there is a 'New Event' section with a 'Mitigation Steps' tab. The 'Mitigation Steps' table shows four steps with their respective durations, costs, and scores.

Risk	Current	Mitigated
Enabled	Absolu...	ID
Type	Name	Shape
Probability	Schedule	Cost
Score	Enabled	Description
Duration	Cost	Probability
Schedule	Cost	
✓	R1	New Event
Very High	High	High
20	✓	Mitigate risk
30d	\$10,000	Very Low
Low	Medium	

Enabled	Step	Description	Duration	Cost	Probability	Schedule	Cost	Score
✓	1	Step 1	10d	\$1,000	High	Medium	Medium	12
✓	2	Step 2	10d	\$2,000	Medium	Medium	Medium	9
✓	3	Step 3	5d	\$3,000	Very Low	Low	Medium	
✓	4	Step 4	5d	\$4,000	Very Low	Low	Medium	

Cost Risk from a Cost Loaded Schedule

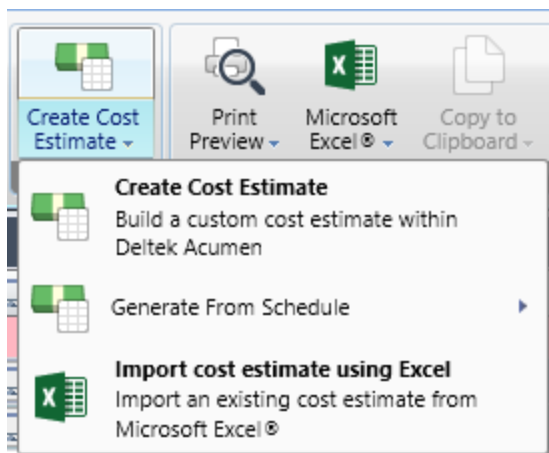
If you resource or cost load your schedules, you can create an Acumen Cost Risk model from the schedule. Use the **Create Cost Estimate** option to do this.

The screenshot shows the Deltek Acumen interface with the 'Create Cost Estimate' menu open. The menu options are: 'Generate From Schedule', 'Generate With Overlay', 'Generate Without Overlay', and 'Import cost estimate using Excel'. The background shows a table with columns for Id, Description, Remaining..., and Finish.

Id	Description	Remaining...	Finish
Initial Plan	Initial Plan Project	805d	
Initial Plan	Initial Plan	805d	

Cost Risk

You can create or import a cost model that is not based on the schedule. You can create a cost estimate from scratch or import one from Excel.



Integrated Cost / Schedule Risk Analysis

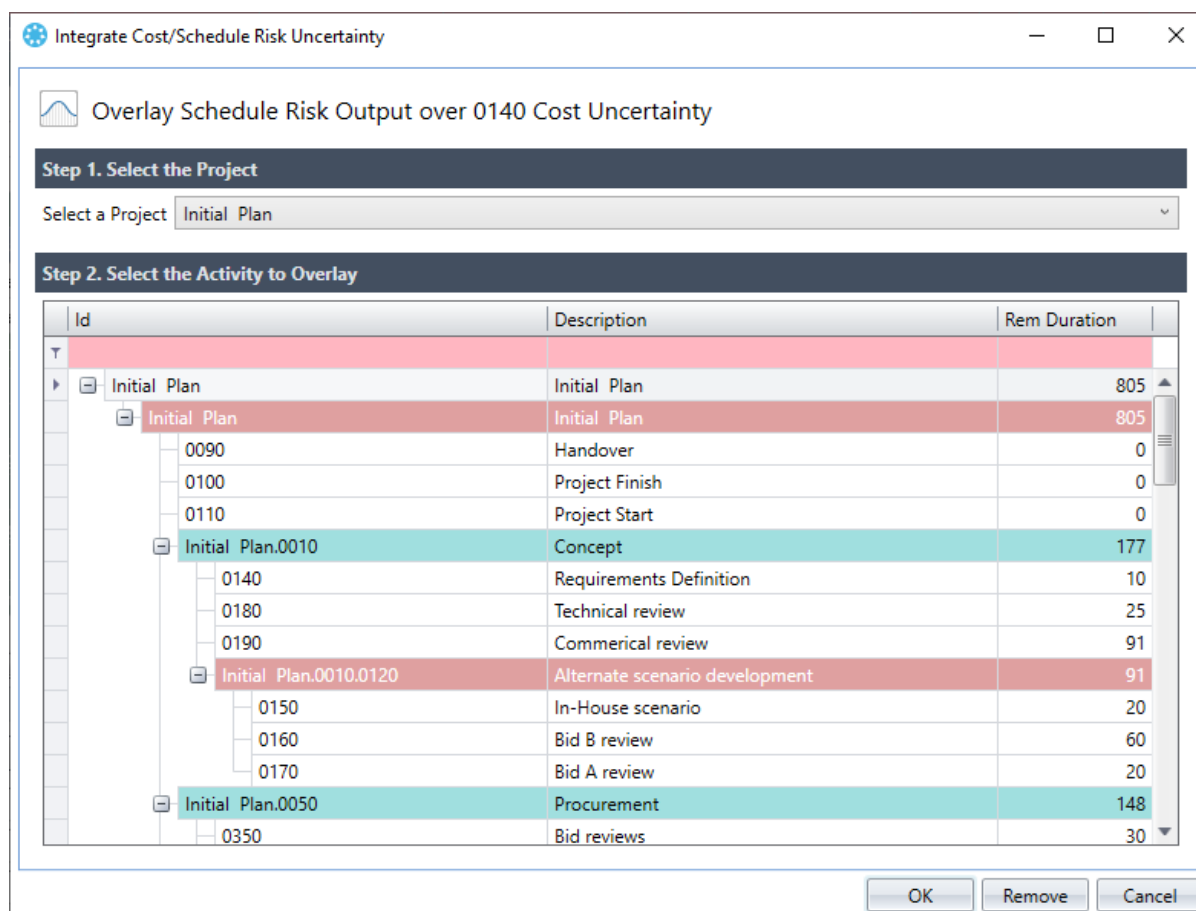
If you create your cost estimate from your schedule, you can link each cost line to the activity it came from or manually link cost lines to activities where it makes sense.

If you have an independent cost estimate not created from the schedule, you can link cost lines to activities or hierarchy nodes (like elements of the WBS).

To manually link cost lines to activities, click on the **Cost/Schedule Overlay** icon for the cost line you wish to link.

Activities											
	Id	Description	Actual Cost	Remaining Cost	Total Cost	Cost Uncertainty	Shape	%	CLT	Cor...	Activity Schedule...
		Initial Plan - Cost									
		Initial Plan	\$0	\$195,571,640	\$195,571,640						
		0090 Handover	\$0	\$0	\$0			100%			
		0100 Project Finish	\$0	\$0	\$0			100%			
		0110 Project Start	\$0	\$0	\$0			100%			
		Initial Plan.0010 Concept	\$0	\$9,600,000	\$9,600,000						
		0140 Requirements Defi...	\$0	\$3,000,000	\$3,000,000			100%			
		0180 Technical review	\$0	\$1,000,000	\$1,000,000			100%			
		0190 Commerical review	\$0	\$0	\$0			100%			
		Initial Plan.0010.01...	\$0	\$5,600,000	\$5,600,000						
		Initial Plan.0020 Early Design	\$0	\$4,960,000	\$4,960,000						

Acumen displays the list of projects and their activities.



This is powerful in that you can have one cost estimate with links to multiple projects. Select the schedule line you want linked to the cost line and click **OK**.

Acumen displays the activity ID of the linked activity (or hierarchy node).

Initial Plan.0010	Concept	\$0	\$9,600,000	\$9,600,000	100%	0090
0140	Requirements Defi...	\$0	\$3,000,000	\$3,000,000	100%	
0180	Technical Review	\$0	\$1,000,000	\$1,000,000	100%	

When you run risk analysis on the cost estimate, make sure you enable the option to **Account for cost of schedule risk impact**. You can also choose to **Use Dynamic Schedule Results** or results from the last time you refreshed the schedule results to the cost estimate.

To use these options, select a cost project in the Project pane and then on the S3 // Risk tab, in the Analysis menu, click the bottom of the Risk Analysis icon to display the drop-down menu. The options are located at the bottom of the menu.

Simulation	
Number of Iterations	1000
Complete Automatically Perform risk analysis until results converge to given accuracy.	
Automatic Accuracy	1 %
Convergence Iterations	100
Scenarios	
Uncertainty Only (No Risk Events) Perform the risk analysis including only duration uncertainty.	
<input checked="" type="checkbox"/>	Uncertainty and Risk Events (No Mitigation) Perform the risk analysis including both uncertainty and pre-mitigated risk events.
	Uncertainty and Risk Events (Mitigated, Excluding Overhead) Perform the risk analysis including both uncertainty and pre-mitigated risk events, but without the cost/schedule effort required for mitigation.
	Uncertainty and Risk Events (Mitigated, Including Overhead) Perform the risk analysis including both uncertainty and pre-mitigated risk events, and including the cost/schedule effort required for mitigation.
Repeatability	
<input checked="" type="checkbox"/>	Use Fixed Seed
	Seed Value: 1
Activity Correlation	
<input checked="" type="checkbox"/>	Use correlation to link activities
Hierarchical Risk Models	
	Use Correlation to Overcome the Central Limit Theorem.
	Correlation Coefficient: 50 %
Cost/Schedule Integration	
<input checked="" type="checkbox"/>	Account for cost of schedule risk impact
<input checked="" type="checkbox"/>	Use Dynamic Schedule Results

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