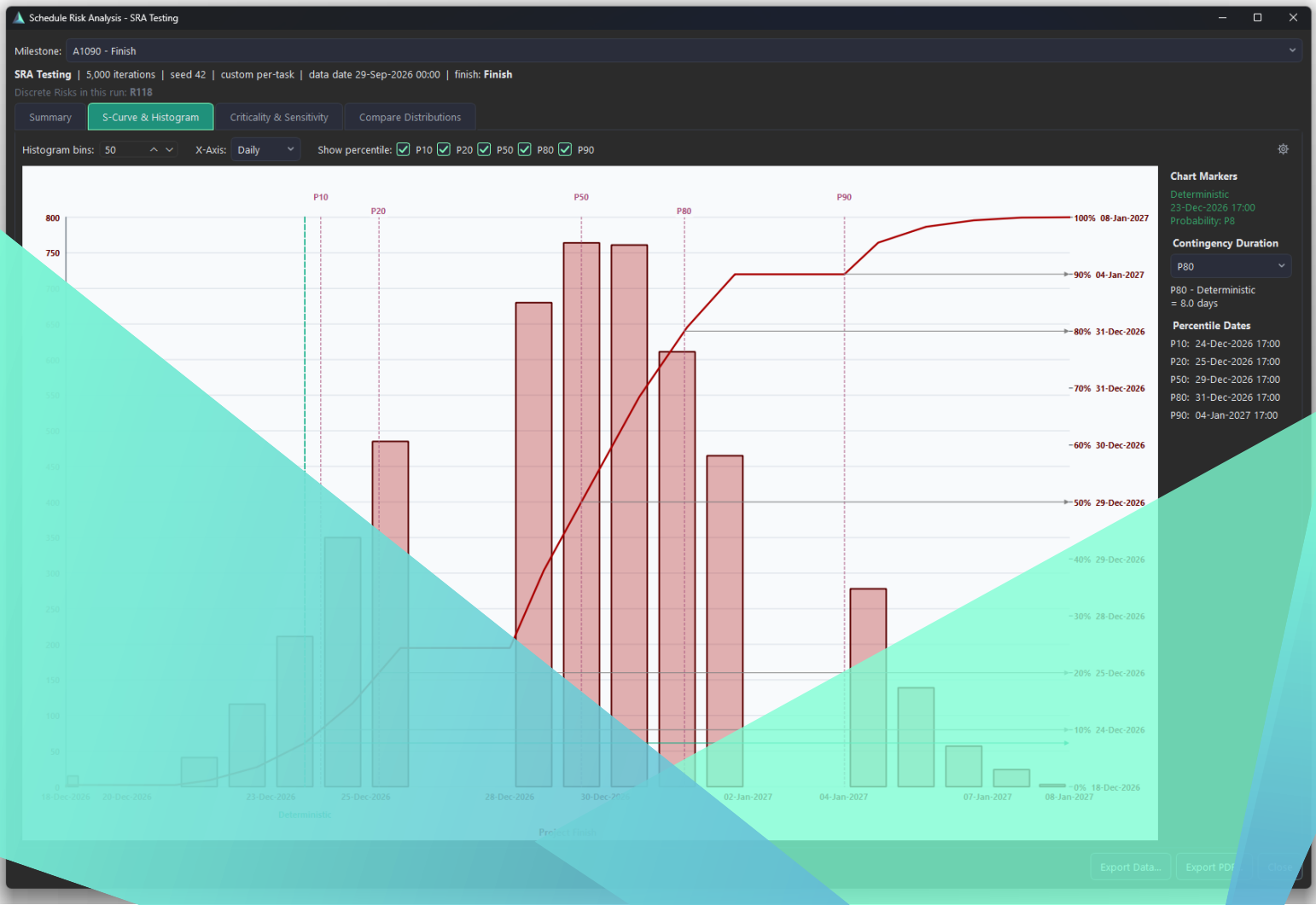
Schedule Prism

www.SchedulePrism.com



Schedule Risk Analysis (SRA)

Schedule Prism User Guide

Easily assign duration uncertainty and discrete risks, run simulations, and analyse schedule risk, completion probabilities and criticality.

Version 2.2.1

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Rev-02

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1. Schedule Risk Analysis (SRA)

Overview

The Schedule Risk Analysis (SRA) feature in Schedule Prism lets users assess schedule uncertainty and evaluate the likelihood of achieving planned completion dates using Monte Carlo simulation.

SRA is available in Single Schedule Analysis. It can be run for selected milestones or activities, so the entire project schedule does not need to be analysed.

Key Capabilities

1. **Select Finish Milestones or Activities**: Run SRA for one or more selected milestones or activities. All predecessor activities and their logic are automatically included in the analysis scope.
2. **Schedule Health Check**: Check the schedule against SRA-related metrics before running the analysis, to confirm it is fit for risk analysis.
3. **Duration Uncertainty**: Assign Min / Most Likely / Max durations and a distribution (e.g. Triangle or BetaPert) to activities. Uncertainty can be entered per activity or assigned in bulk, by Activity Code, at WBS level or from reusable uncertainty templates (e.g. Realistic, Aggressive, High Uncertainty). Existing assignments are protected from accidental overwriting.
4. **Duration Correlation**: Group related activities (e.g. same crew, method or conditions) so their sampled durations move together. Reusable correlation categories (Low, Medium, High, Same severity) are provided.
5. **Probability of Occurrence**: Set the probability that an activity occurs in the simulation, to model work that may or may not be needed.
6. **Risk Register**: Define and manage four types of discrete item, each with pre- and post-mitigated probabilities:
    - **Risks**, which add duration.
    - **Opportunities**, which save duration.
    - **Events**, which create a non-working or reduced-working window between dates.
    - **Downtime**, which models recurring monthly loss of days, such as seasonal weather.
7. **Risk Assignment**: Assign risks to activities from the activity table, the Discrete Risk panel or risk columns. With risk columns, ticking at WBS level assigns a risk

to all activities under that WBS. Impacts can be overridden per activity with Manual Edit, and multiple risks on one activity can be run sequentially or in parallel.

8. **Monte Carlo Simulation**: Run thousands of iterations using Monte Carlo or Latin Hypercube sampling, with a repeatable random seed. The simulation can use pre- or post-mitigated probabilities, so exposure can be compared before and after mitigation.
9. **Results Analysis**: Review the results in several ways:
    - finish-date distributions on an S-curve and histogram, with P-dates, the deterministic probability and contingency;
    - criticality and sensitivity drivers;
    - Risk Impact, showing the days added or saved by each risk;
    - comparison of saved scenarios;
    - sample iterations on the Gantt chart.
10. **Reporting and Export**: Build custom dashboards and save them as layouts, then export them to PDF. You can also export the simulation data and P-schedules to Excel, and generate an AI prompt for a written risk analysis report.

Open Schedule Risk Analysis (SRA)

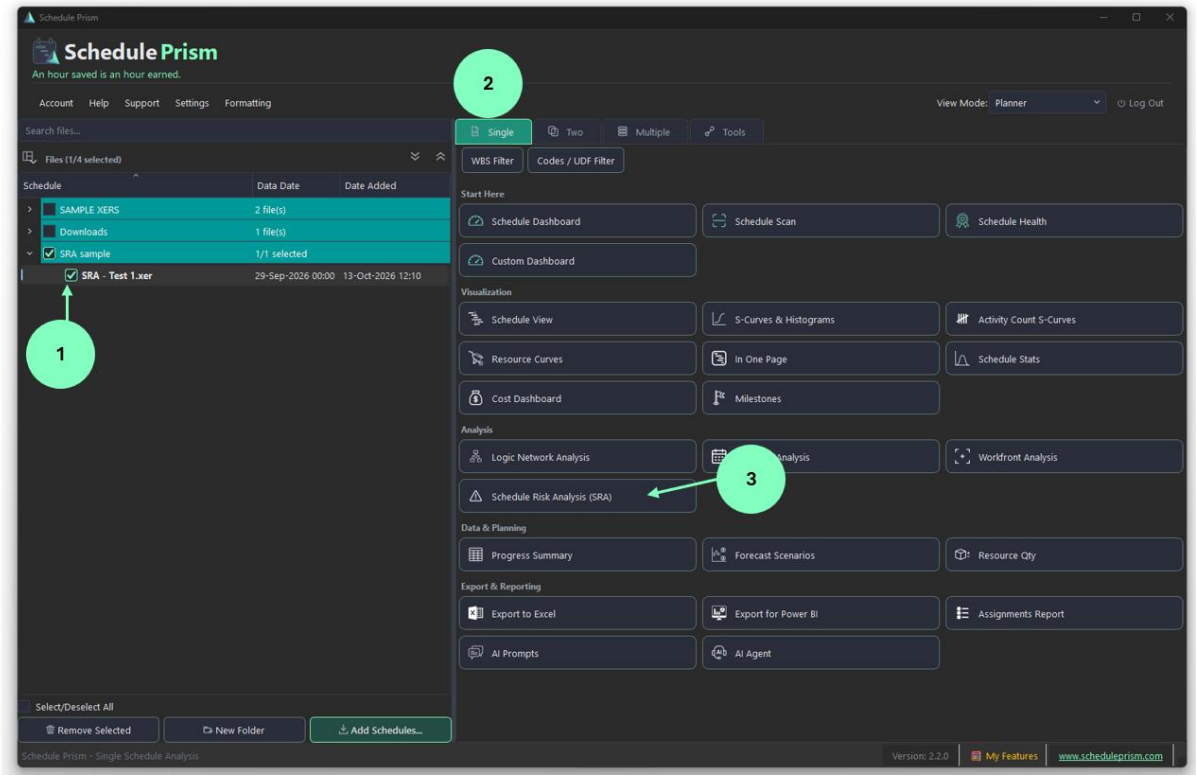


Figure 1 - Open Schedule Risk Analysis (SRA)

To start a new Schedule Risk Analysis:

1. **Select the Schedule** - Select the required schedule from the Schedule Prism workspace.
2. **Single Schedule Mode** - Switch to the **Single** analysis tab.
3. **Open SRA** - Click **Schedule Risk Analysis (SRA)** under the Analysis section.

The Schedule Risk Analysis window opens, allowing you to select the milestones or activities to be analysed.

Note: To open an existing saved Risk Plan, **do not select a schedule**. Simply click **Schedule Risk Analysis (SRA)** and select the saved Risk Plan. Refer to the **Risk Plans** section of this document for more details.

Schedule Risk Analysis - Main Workspace

The **Schedule Risk Analysis (SRA) workspace** provides a central interface for configuring duration uncertainty, managing discrete risks, running Monte Carlo simulations and reviewing simulation results.

Users can select specific milestones or activities for analysis, with all predecessor activities and their associated logic automatically included in the simulation scope.

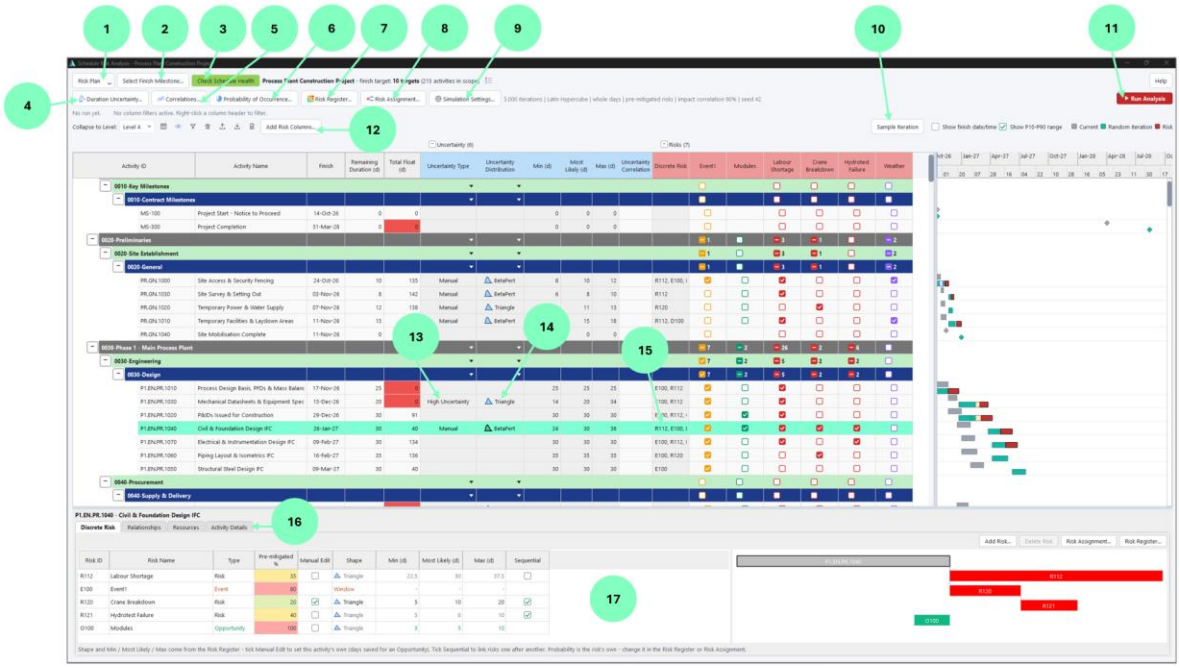


Figure 2 - Schedule Risk Analysis Main Workspace

① **Risk Plan (Save / Open)**: Save or open an SRA Risk Plan, including risk configurations, schedule data and simulation results.

② **Select Finish Milestone / Activities**: Select the milestones or activities to be analysed. All predecessor activities and their associated logic are automatically loaded into the analysis scope.

③ **Check Schedule Health**: Run a schedule health check against SRA-related metrics (e.g. open ends, constraints, lags, logic quality) to confirm the schedule is fit for risk analysis before running the simulation.

④ **Duration Uncertainty**: Open the Duration Uncertainty dialog to assign uncertainty distributions to activities. Supports bulk assignment, Activity Code-based assignment, uncertainty categories (a reusable template) and uncertainty correlation between activities.

⑤ **Correlations**: Define correlation between the duration uncertainties of related activities so they tend to vary together in the simulation, rather than independently.

⑥ **Probability of Occurrence**: Configure the probability that an activity will occur during the simulation.

⑦ **Risk Register**: Add, edit or delete discrete items (risks, opportunities, events and downtime), including their probability of occurrence, impact distribution and apply settings.

⑧ **Risk Assignment**: Manage the assignment of discrete risks to schedule activities.

⑨ **Simulation Settings**: Configure simulation parameters, including the number of iterations, sampling method, impact correlation, random seed and other simulation options.

⑩ **Sample Iteration**: Display individual simulation iterations on the Gantt chart to visualise how activity durations, risk impacts and forecast dates change under different simulated scenarios.

⑪ **Run Analysis**: Execute the Monte Carlo simulation using the configured duration uncertainties, correlations, activity probabilities, discrete risks and risk relationships.

⑫ **Add Risk Columns**: Add the required risks from the Risk Register as columns in the activity table. Risks are then assigned simply by ticking the box against an activity. Ticking at WBS level applies the risk to all activities under that WBS, and unticking at WBS level removes it from all of them. WBS rows show a count of how many child activities carry each risk.

⑬ **Uncertainty Type**: Shows how each activity's uncertainty was assigned, either by an uncertainty category (e.g. High Uncertainty) or manually.

⑭ **Uncertainty Distribution and Values**: Shows the assigned distribution (Triangle, BetaPert, etc.) with its Minimum, Most Likely and Maximum durations, plus the Uncertainty Correlation applied to the activity.

⑮ **Discrete Risk Assignments**: Lists the risk IDs assigned to each activity (e.g. R112, E100), with the corresponding risk impacts shown on the Gantt chart.

⑯ **Activity Details Panel**: Review information associated with the selected activity, including Discrete Risks, Relationships, Resources and Activity Details.

⑰ **Assigned Discrete Risks and Sequencing**: Review the discrete risks assigned to the selected activity, including their pre-mitigated probability, impact shape and Min / Most Likely / Max values. By default these are inherited from the Risk Register. Ticking Manual Edit lets you override the distribution shape and the Min / Most Likely / Max duration impacts for this activity only, without changing the Risk Register values. When Sequential is enabled, the assigned risks are linked one after another, as illustrated in the risk timeline.

The workspace combines an **activity table**, an interactive **Gantt chart** and a lower **activity details panel**.

SRA Schedule View Toolbar

The toolbar above the activity table controls how the schedule is displayed, filtered, exported and imported.

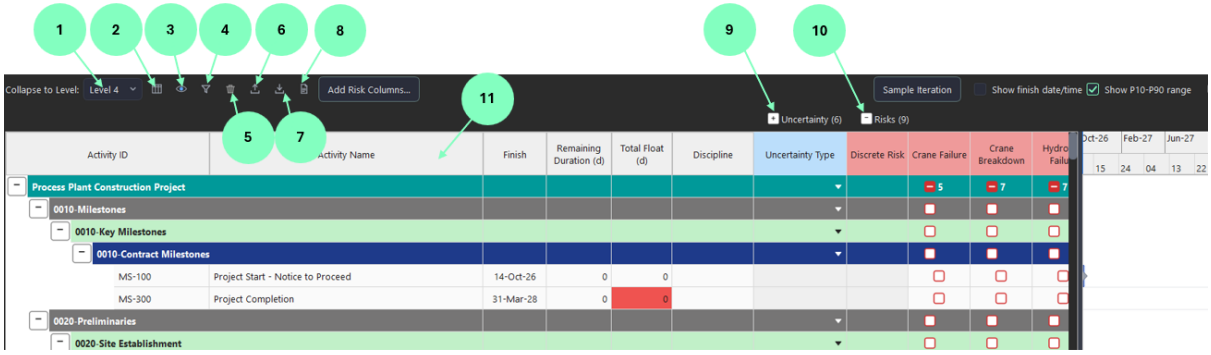


Figure 3 - SRA Schedule View Toolbar

① **Collapse to Level**: Expand or collapse the WBS hierarchy to the selected level (e.g. Level 4). Use a lower level for a summary view and a higher level to see individual activities.

② **Manage Columns**: Add or remove columns in the activity table, such as Discipline or other Activity Codes and schedule fields. Use this to show the information you need when reviewing or assigning uncertainty and risks.

③ **View Menu**: Change how values are displayed:

- Show or hide the **time** component in date columns.
- Set the number of **decimal places** for numeric values, such as durations.

④ **Risk Filters**: Filter the activity table by assignment status:

- **Assigned Duration Uncertainties**: Activities with duration uncertainty.
- **Assigned Discrete Risks**: Activities with at least one discrete risk.
- **Assigned either one**: Activities with duration uncertainty, a discrete risk, or both.
- **Not Assigned**: Activities with neither. Use this to find gaps in the risk model.
- **Show All**: Remove the risk filter.

⑤ **Clear Filters**: Remove all filters applied to the schedule view, including risk filters and column filters.

⑥ **Export to Excel**: Export all activities in the SRA scope, with their duration uncertainty and discrete risk assignments, to Excel.

⑦ **Import from Excel**: Import assignments from Excel using the exported file as the template. For example, export the schedule, enter duration uncertainty values for each activity in Excel, then import them back into Schedule Prism.

⑧ **Print to PDF**: Print the schedule view to PDF, including all assignments, for review or record keeping.

⑨ **Uncertainty (n)**: Expand or collapse the columns related to duration uncertainty (Uncertainty Type, Uncertainty Distribution, Min / Most Likely / Max and Uncertainty Correlation). The number shows how many columns are in the group.

⑩ **Risks (n)**: Expand or collapse the discrete risk columns added with **Add Risk Columns.** The number shows how many risk columns are in the group.

⑪ **Column Filters**: Right-click a column header to filter the schedule view by that column's values. The status line above the toolbar shows whether any column filters are active.

Tip: Combine filters with bulk assignment. For example, filter the table by a column such as Discipline, or use **Not Assigned**, then apply duration uncertainty in the Duration Uncertainty dialog. Bulk Assign applies only to the activities shown.

Select Milestones / Activities

The first step after opening **Schedule Risk Analysis (SRA)** is to select the milestones or activities to be analysed.

Schedule Prism automatically identifies and loads **all predecessor activities and their associated relationships** leading to the selected milestones or activities. This allows users to perform targeted risk analysis on specific completion objectives without including unrelated areas of the schedule.

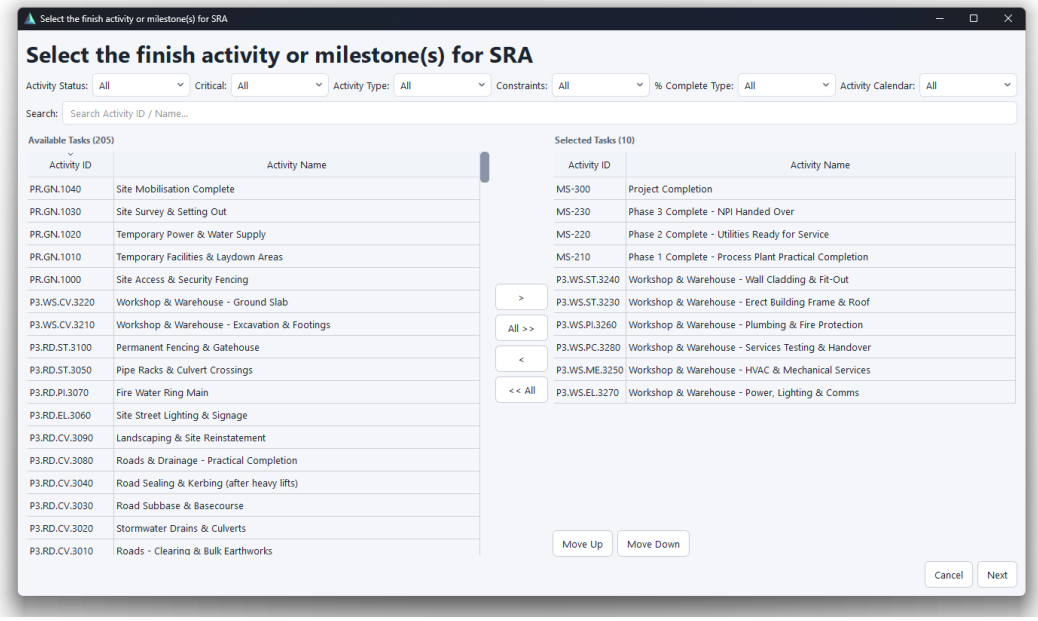


Figure 4 - Selecting Milestones or Activities for SRA

Selecting Milestones or Activities

1. **Filter Activities** - Use the filters at the top of the dialog to narrow down the available activities by:

- Activity Status
- Criticality
- Activity Type
- Constraints
- % Complete Type
- Activity Calendar

2. **Search Activities** - Enter a full or partial Activity ID or Activity Name in the search box to find specific activities or milestones.
3. **Select Activities** - Select the required activities from the **Available Tasks** panel and click **>** to move them to the **Selected Tasks** panel. Use **All >>** to select all available activities.
4. **Remove Activities** - Select activities in the **Selected Tasks** panel and click **<** to remove them, or **<< All** to clear the selection.
5. **Reorder Selected Activities** - Use **Move Up** or **Move Down** to change the order of the selected activities.
6. **Continue** - Click **Next** to confirm the selection and load the corresponding predecessor networks into the SRA workspace.

Note: Multiple milestones or activities can be selected for a single analysis. Schedule Prism includes their combined predecessor networks, allowing the simulation to evaluate multiple completion objectives together.

Duration Uncertainty

Duration Uncertainty defines a range of possible durations for each schedule activity using Minimum, Most Likely and Maximum values and a probability distribution (e.g. Triangle or BetaPert). These ranges are sampled during the Monte Carlo simulation.

Uncertainty can be entered directly against individual activities in the activity table, in days or hours. It can also be assigned in bulk from the Duration Uncertainty dialog, where values are set as percentages of each activity's current Remaining Duration.

Example: for an activity with a Remaining Duration of 10 days:

- Minimum: 80% → 8 days
- Most Likely: 100% → 10 days
- Maximum: 120% → 12 days

Duration Uncertainty Dialog

The dialog has a **Duration unit** selector (Days or Hours) and three tabs: **Bulk Assign**, **By Activity Codes** and **Templated**.

Duration Uncertainty Bulk Assign

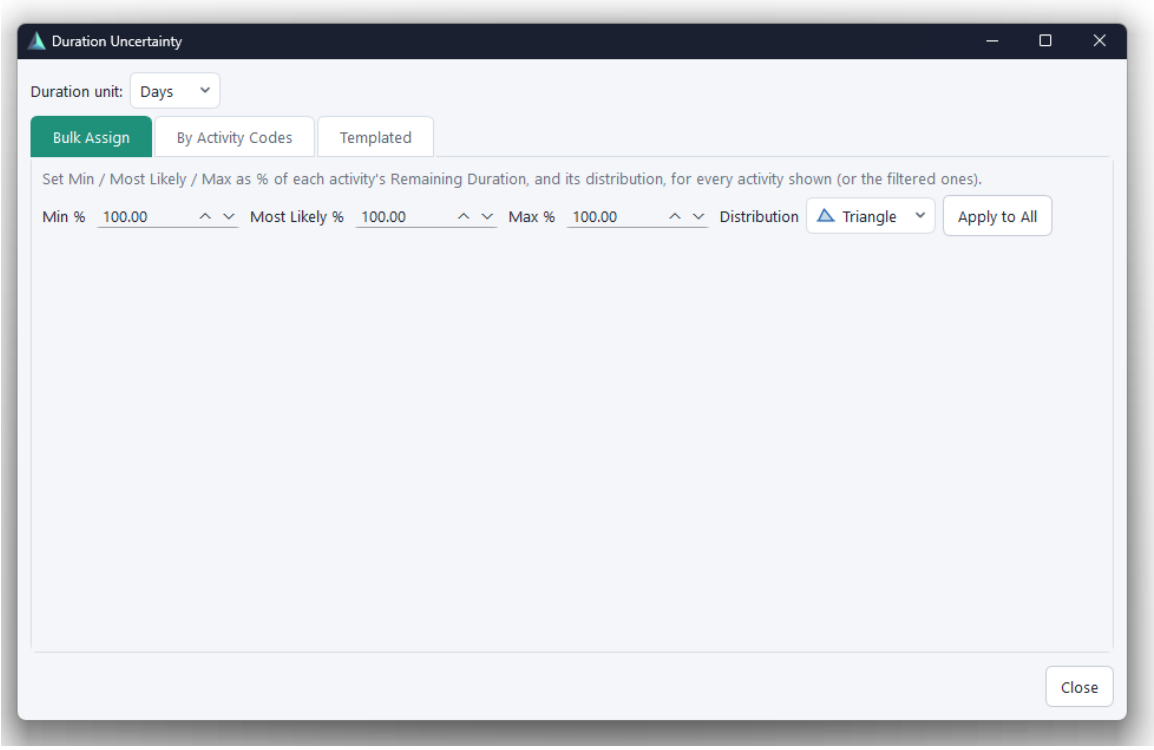


Figure 5 - Duration Uncertainty: Bulk Assign

Enter the Min %, Most Likely % and Max %, select a Distribution, and click **Apply to All**. The percentages are applied to every activity shown in the activity table, or only to the filtered activities if a filter is active. Each activity's own Remaining Duration is used to calculate its values.

Duration Uncertainty By Activity Codes

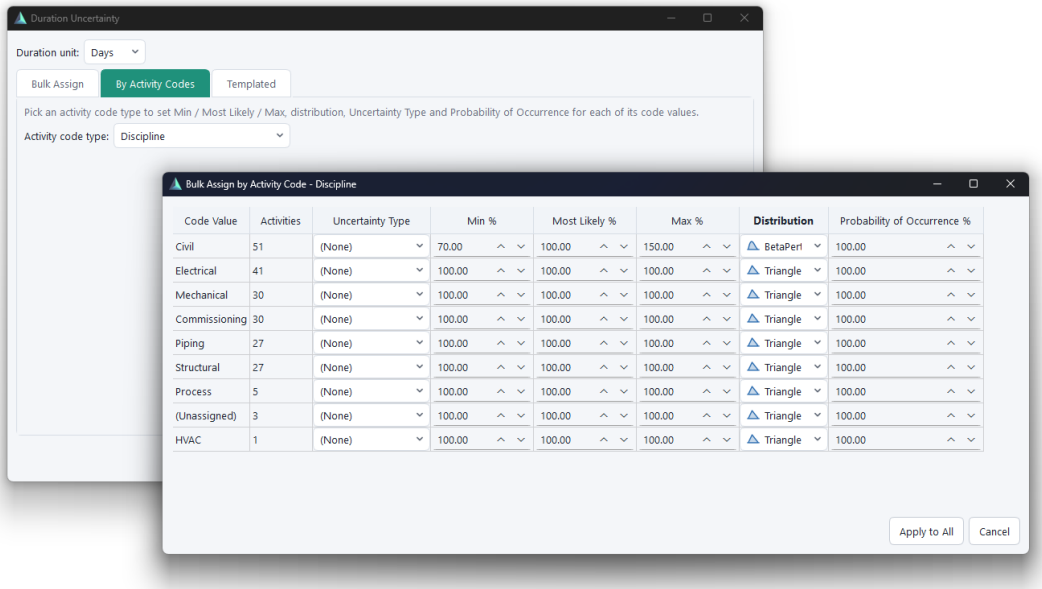


Figure 6 - Bulk Assign by Activity Code

Select an **Activity code type** (e.g. Discipline) to open the Bulk Assign by Activity Code dialog. Each code value is listed with the number of activities assigned to it. For each code value you can set:

1. **Uncertainty Type**: Select a template category from the Templated tab. Its Min, Most Likely and Max percentages and distribution are filled in automatically.
2. **Min %, Most Likely %, Max %**: Alternatively, enter custom percentages for the code value.
3. **Distribution**: Select the distribution shape, such as Triangle or BetaPert.
4. **Probability of Occurrence %**: Set the probability that activities with this code value occur during the simulation.

Click **Apply to All** to apply the settings to the matching activities in the SRA scope. Activities without a code value appear as **(Unassigned)** and can be configured in the same way.

Note: A Probability of Occurrence of 100% means the activity is always included in the simulation. A lower probability allows the activity to be excluded from individual simulation iterations according to its assigned probability.

Example: Civil activities may use 70% / 100% / 150% with a BetaPert distribution, while Electrical activities use a narrower Triangle range, reflecting different levels of uncertainty by discipline.

Duration Uncertainty Templated

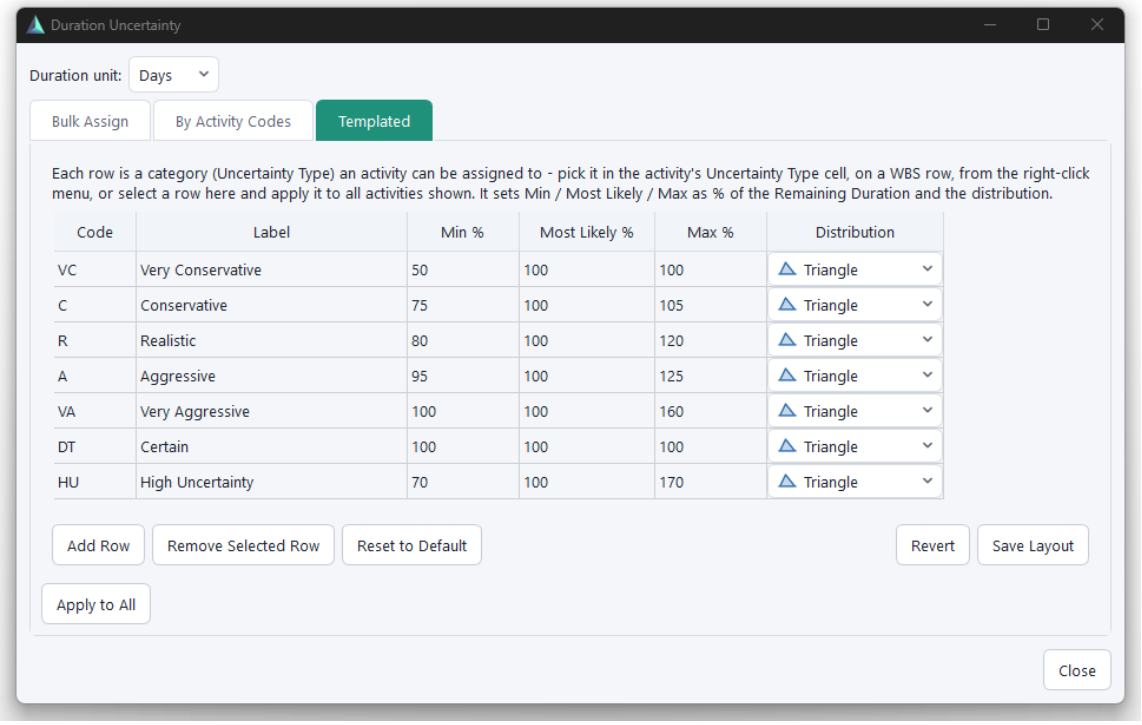


Figure 7 - Duration Uncertainty: Templated

The Templated tab manages reusable uncertainty categories (Uncertainty Types). Each category has a Code, Label, Min %, Most Likely %, Max % and Distribution. Schedule Prism includes the following default categories:

Code	Label	Min %	Most Likely %	Max %
VC	Very Conservative	50	100	100
C	Conservative	75	100	105
R	Realistic	80	100	120
A	Aggressive	95	100	125
VA	Very Aggressive	100	100	160
DT	Certain	100	100	100
HU	High Uncertainty	70	100	170

Categories can be edited, and the template can be managed with these buttons:

- **Add Row / Remove Selected Row**: Add a new category or delete the selected one.
- **Reset to Default**: Restore the default categories.

- **Revert / Save Layout**: Discard unsaved changes or save the template for reuse.
- **Apply to All**: Apply the selected category to all activities shown.

A category can be assigned to activities in several ways: from the activity's **Uncertainty Type** cell, on a **WBS row** (applies to all activities under it), from the **right-click menu**, or via the By Activity Codes tab.

Assigning Duration Uncertainty by WBS

Duration uncertainty can also be assigned to an entire **WBS section**, allowing the same uncertainty settings to be applied to all activities within that WBS.

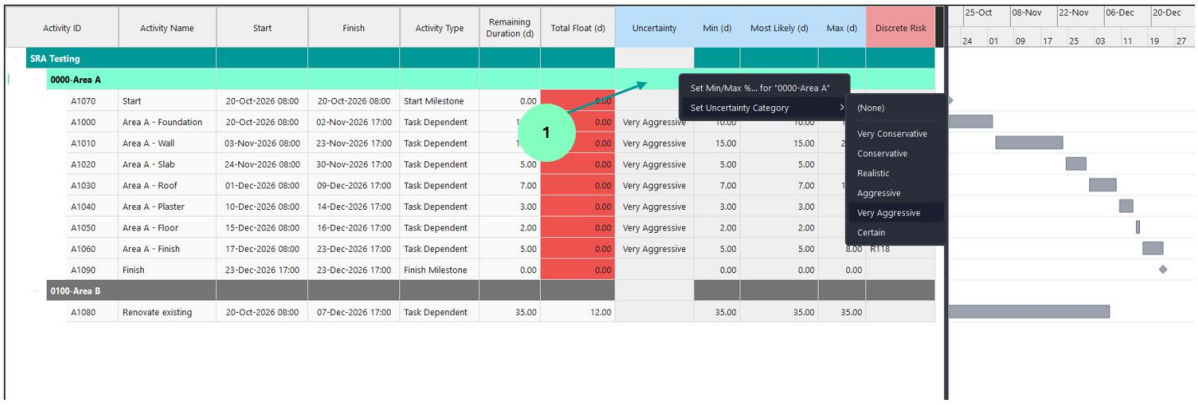


Figure 8 - Assigning Duration Uncertainty by WBS

① **Right-click the required WBS level** in the SRA Schedule View and choose one of the following options:

- **Set Uncertainty Category** - Select a predefined category (e.g., *Very Aggressive*). All activities under the selected WBS will be assigned the Minimum, Most Likely and Maximum percentages defined for that category.
- **Set Min/Max %** - Manually enter the duration uncertainty percentages to apply to all activities under the selected WBS.
- **(None)** - Select this under **Set Uncertainty Category** to remove the assigned uncertainty category from all activities within that WBS.

This provides a quick way to assign consistent duration uncertainty across entire WBS sections without configuring each activity individually.

Assigning Duration Uncertainty to Individual Activities

Duration uncertainty can also be assigned or modified directly for individual activities in the SRA Schedule View. This is useful when particular activities require a different uncertainty assessment from the general bulk assignments.

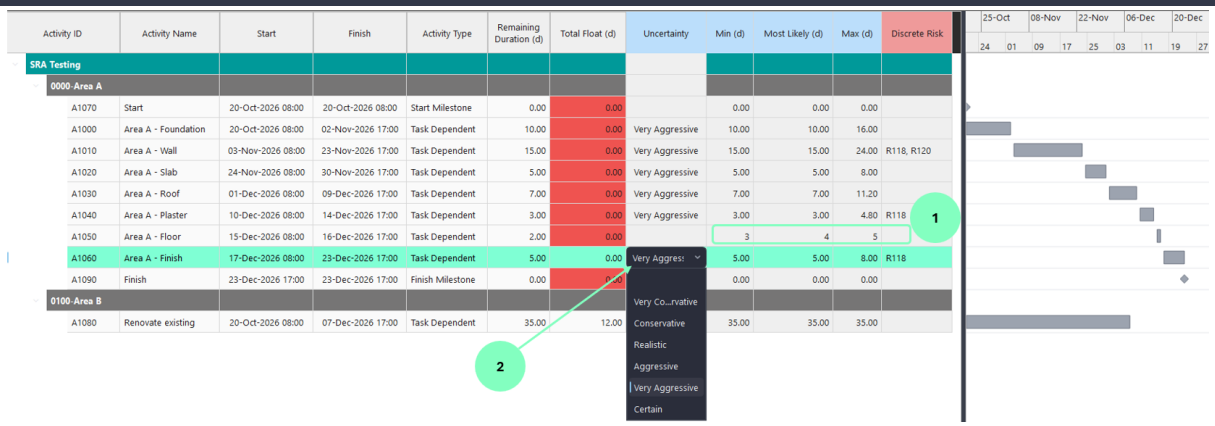


Figure 9 - Assigning Duration Uncertainty to Individual Activities

① **Manual Duration Entry** - Double-click the **Min, Most Likely, or Max** cell and enter the required duration directly in days or hours, depending on the selected duration unit.

② **Select Uncertainty Category** - Double-click the **Uncertainty Type** column cell to open the category drop-down. Select the required predefined category (e.g., *Realistic, Aggressive, or Very Aggressive*). The **Min, Most Likely, and Max** durations will automatically update based on the percentages defined for that category and the activity's remaining duration.

Assigning Duration Uncertainty Using Excel

Duration uncertainty can also be assigned or updated in bulk using Excel. This is useful for large schedules where uncertainty ranges need to be reviewed or modified outside Schedule Prism.

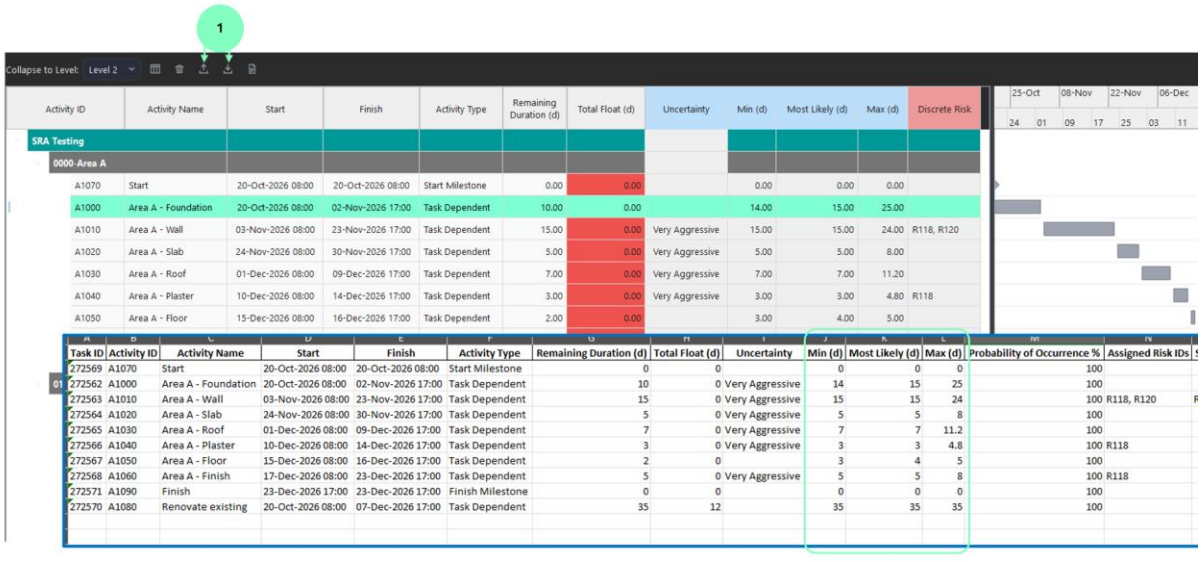


Figure 10 - Exporting and Importing Duration Uncertainty Using Excel

① **Export to Excel** - Click the **Export** icon to export the SRA activity data, including the Min, Most Likely and Max duration columns. Save the exported Excel file.

② **Update Durations in Excel** - Open the exported file and enter the required values in the **Min, Most Likely and Max** columns for the relevant activities.

③ **Import from Excel** - Save the updated Excel file and click the **Import** icon in Schedule Prism to import the revised duration values.

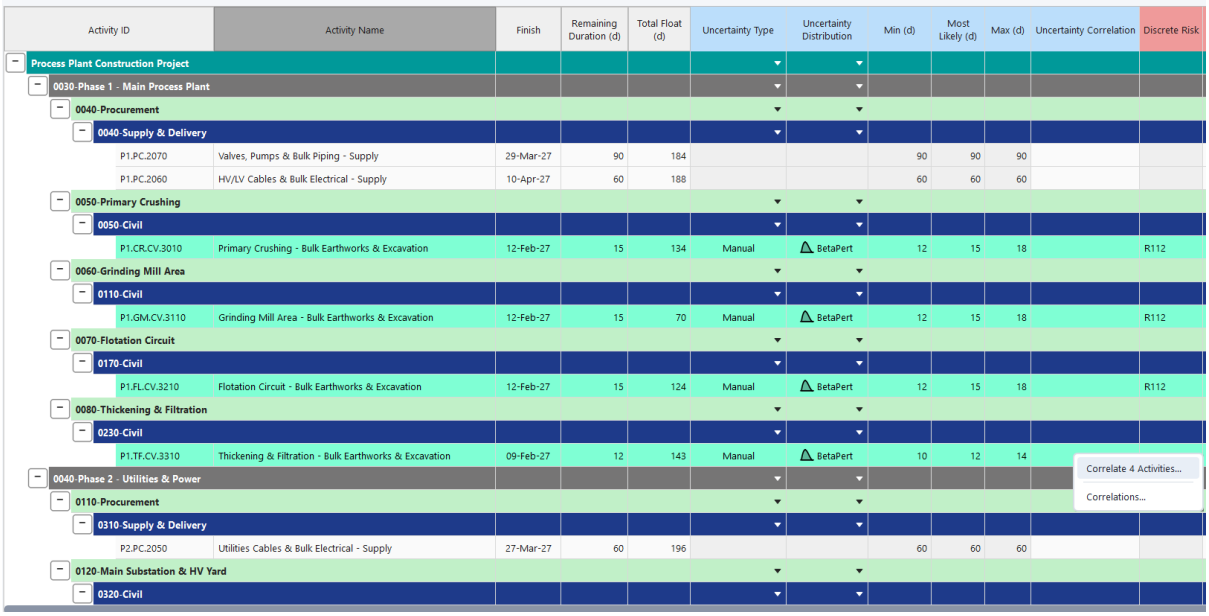
Important: Imported duration values override any existing Min, Most Likely and Max values, even if an uncertainty category has already been assigned to the activity. This allows individual duration ranges to be customised independently of the predefined categories.

Duration Uncertainty Correlation

By default, each activity's duration is sampled independently in every iteration. In reality, related activities often perform well or badly together, for example when they use the same crew, method or ground conditions. Correlation links these activities so their sampled durations move together. Without it, high and low samples tend to cancel each other out, which can understate the overall schedule risk and make the P10-P90 range look narrower than it really is.

Correlation does not change each activity's own Min / Most Likely / Max values. It only changes how the activities' samples line up across iterations.

Creating a Correlation Group



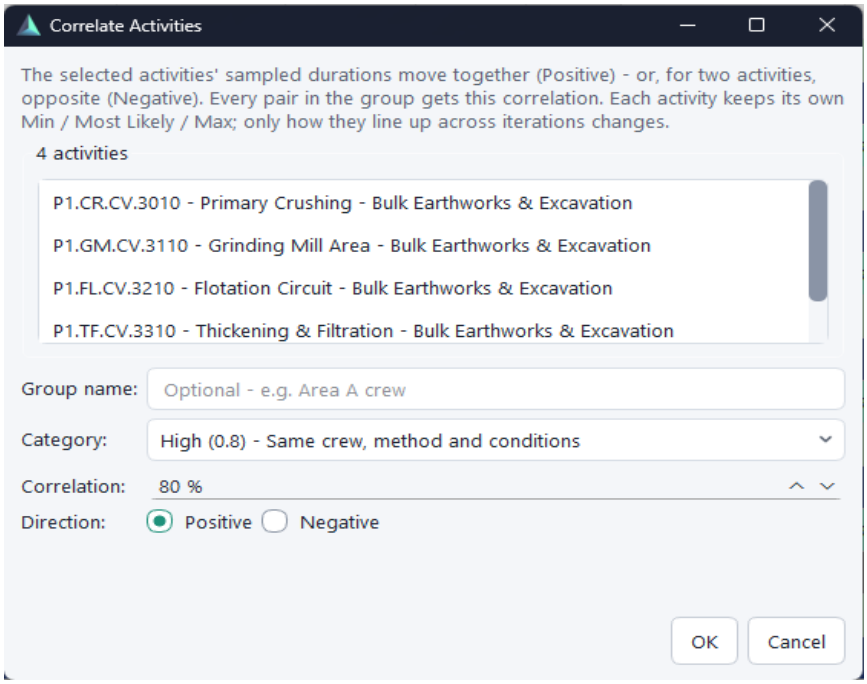


Figure 11 - Correlate Activities

1. Select the activities to correlate. You can:
    - select multiple activities in the activity table,
    - select a WBS row to include all activities under it, or
    - apply a column filter and select the filtered activities.
2. Right-click and choose **Correlate N Activities** to open the Correlate Activities dialog.

3. Configure the group:
    - **Group name** (optional): A descriptive name, e.g. "EW Cor." or "Area A crew".
    - **Category**: Select a correlation category (e.g. High (0.8) - Same crew, method and conditions). The Correlation % fills in automatically.
    - **Correlation %**: Adjust the value directly if required.
    - **Direction**: **Positive** means the durations move together. **Negative** means they move in opposite directions, and is available only when exactly two activities are selected.
4. Click **OK**. Every pair of activities in the group receives the same correlation.

The **Uncertainty Correlation** column shows the group assigned to each activity, e.g. *C1 EW Cor. · High 80%* (group ID, group name, category and value).

An activity can belong to only one correlation group.

Right-Click Options

Right-clicking a correlated activity provides these options:

- **Correlate N Activities**: Create a new group from the current selection.
- **Remove from Correlation**: Remove the selected activities from their group.
- **Select Correlation Group *Cn***: Select all activities in the same group in the activity table.
- **Correlations**: Open the Correlations dialog.

To clear correlations in bulk, right-click a WBS row in the Uncertainty Correlation column. This clears the correlation from all activities under that WBS.

Correlations Dialog

Open the Correlations dialog in either of these ways:

- Click **Correlations** in the SRA toolbar (⑤).
- Right-click an activity in the activity table and choose **Correlations** from the context menu.

Groups

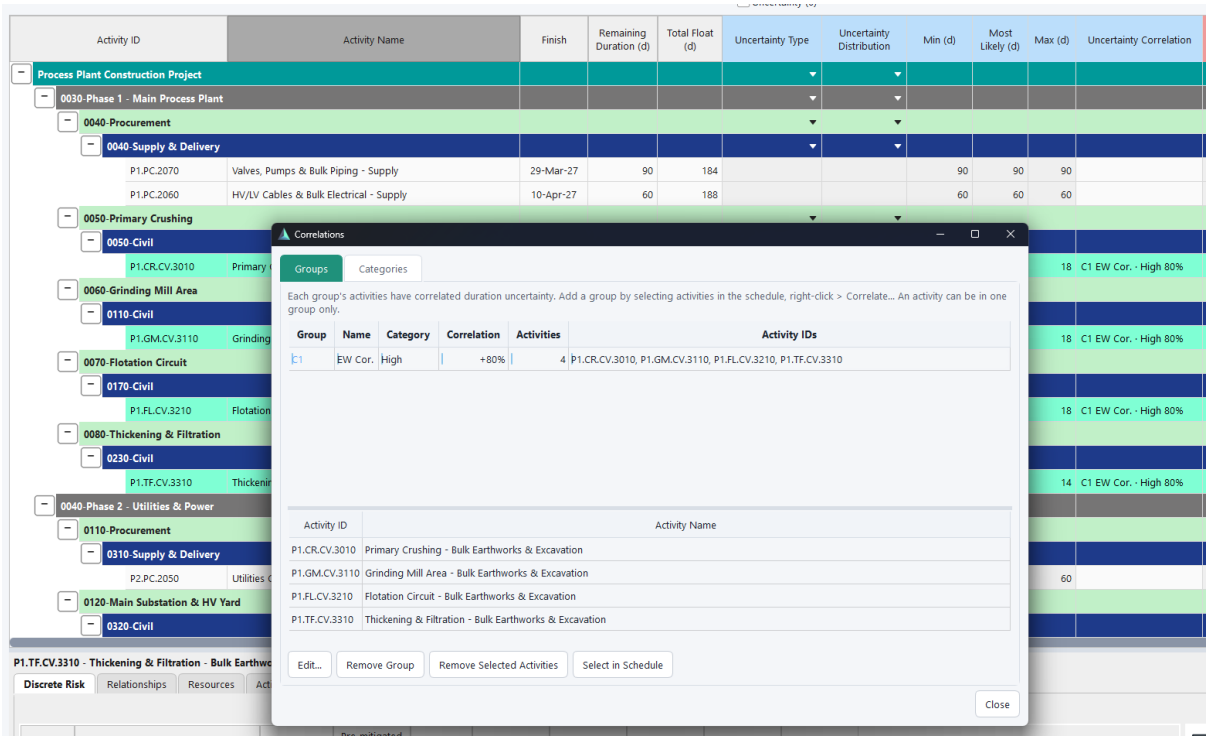


Figure 12 - Correlations: Groups

The Groups tab lists every correlation group, with its Group ID, Name, Category, Correlation value, number of Activities and Activity IDs. Selecting a group lists its activities in the lower pane, where you can:

- **Edit**: Change the group's name, category, correlation value or direction.
- **Remove Group**: Delete the group and clear the correlation from its activities.
- **Remove Selected Activities**: Remove individual activities from the group.
- **Select in Schedule**: Highlight the group's activities in the activity table.

Categories

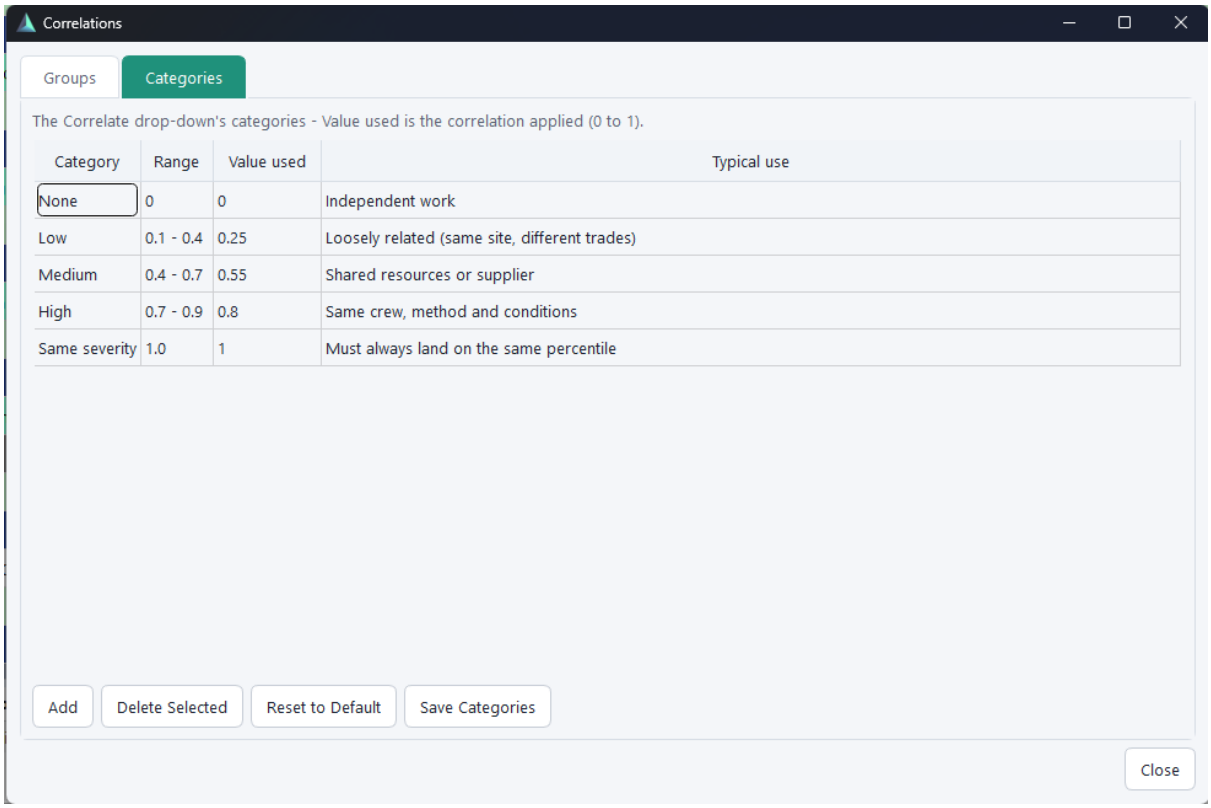


Figure 13 - Correlations: Categories

The Categories tab defines the reusable categories shown in the Correlate dropdown. The **Value used** is the correlation coefficient applied (0 to 1).

Category	Range	Value used	Typical use
None	0	0	Independent work
Low	0.1 - 0.4	0.25	Loosely related (same site, different trades)
Medium	0.4 - 0.7	0.55	Shared resources or supplier
High	0.7 - 0.9	0.8	Same crew, method and conditions
Same severity	1.0	1	Must always land on the same percentile

Use **Add** and **Delete Selected** to manage categories, **Reset to Default** to restore the defaults, and **Save Categories** to keep your changes for future use.

Clearing Correlations

Correlations can be cleared at three levels:

- **Individual activities**: Select one or more correlated activities, right-click and choose **Remove from Correlation**. The activities are removed from their group, and the rest of the group stays correlated.

- **WBS level**: Right-click a WBS row in the **Uncertainty Correlation** column to clear the correlation from all activities under that WBS in one step.
- **Whole group**: In the Correlations dialog (Groups tab), select the group and click **Remove Group**. This deletes the group and clears the correlation from all of its activities. To remove only some activities, select them in the lower pane and click **Remove Selected Activities**.

When an activity's correlation is cleared, its Min / Most Likely / Max values and distribution are unchanged. It is simply sampled independently again.

Duration Uncertainty Assignment Priority

Duration uncertainty assignments follow a **last-applied-wins** principle. Whichever method is used (Bulk, Activity Code, WBS, Individual Activity or Excel Import), the most recent assignment replaces the previous duration uncertainty settings for the affected activities.

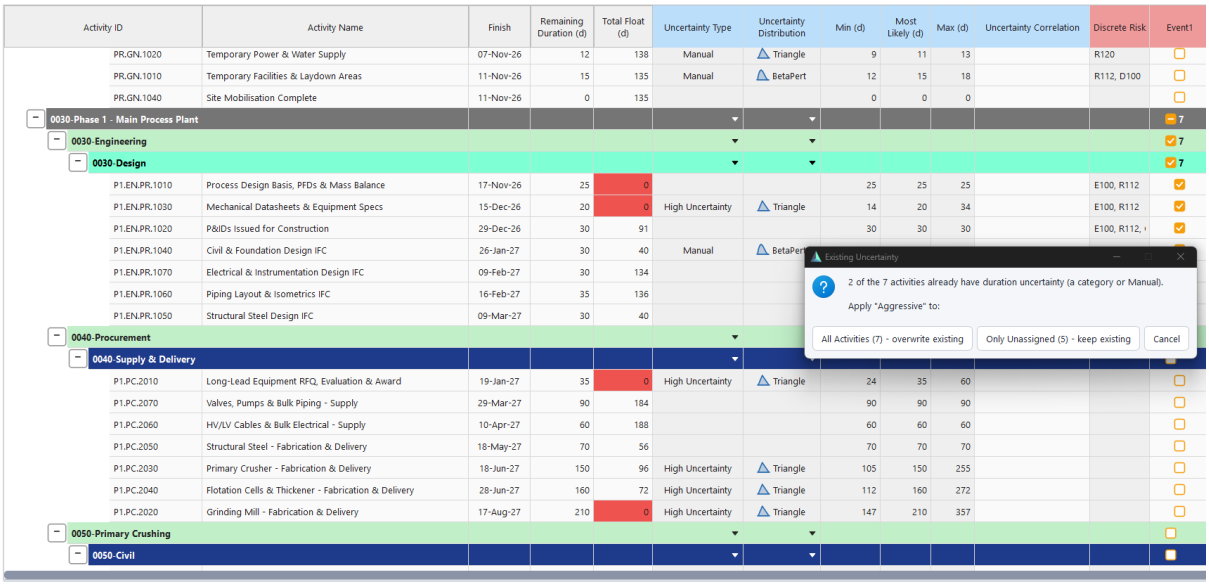


Figure 14 - Existing Uncertainty prompt

To prevent existing settings from being overwritten unintentionally, Schedule Prism checks before applying an assignment to a group of activities. If some of those activities already have duration uncertainty (either a category or Manual values), the **Existing Uncertainty** prompt shows how many are affected and asks how to proceed:

- **All Activities (n) - overwrite existing**: Apply the new setting to every activity in the selection, replacing any existing uncertainty.
- **Only Unassigned (n) - keep existing**: Apply the new setting only to activities that have no uncertainty yet, leaving existing assignments unchanged.
- **Cancel**: Make no changes.

Example: Applying the “Aggressive” category to the 0030-Design WBS (7 activities), where 2 activities already have uncertainty assigned:

- **All Activities (7)** sets all seven to Aggressive.
- **Only Unassigned (5)** sets the five unassigned activities to Aggressive and keeps the existing settings on the other two.

This lets you apply a broad default first (e.g. at WBS or Activity Code level) and then fill gaps later without losing activity-specific values that have already been set.

Discrete Risk

Discrete Risks - Risk Register

The Risk Register is where you define and manage the discrete items that may affect the schedule: risks, opportunities, events and downtime. Each item has a type, a probability of occurrence and a duration impact, and can be assigned to one or more activities.

Click **Risk Register** in the SRA toolbar to open it.

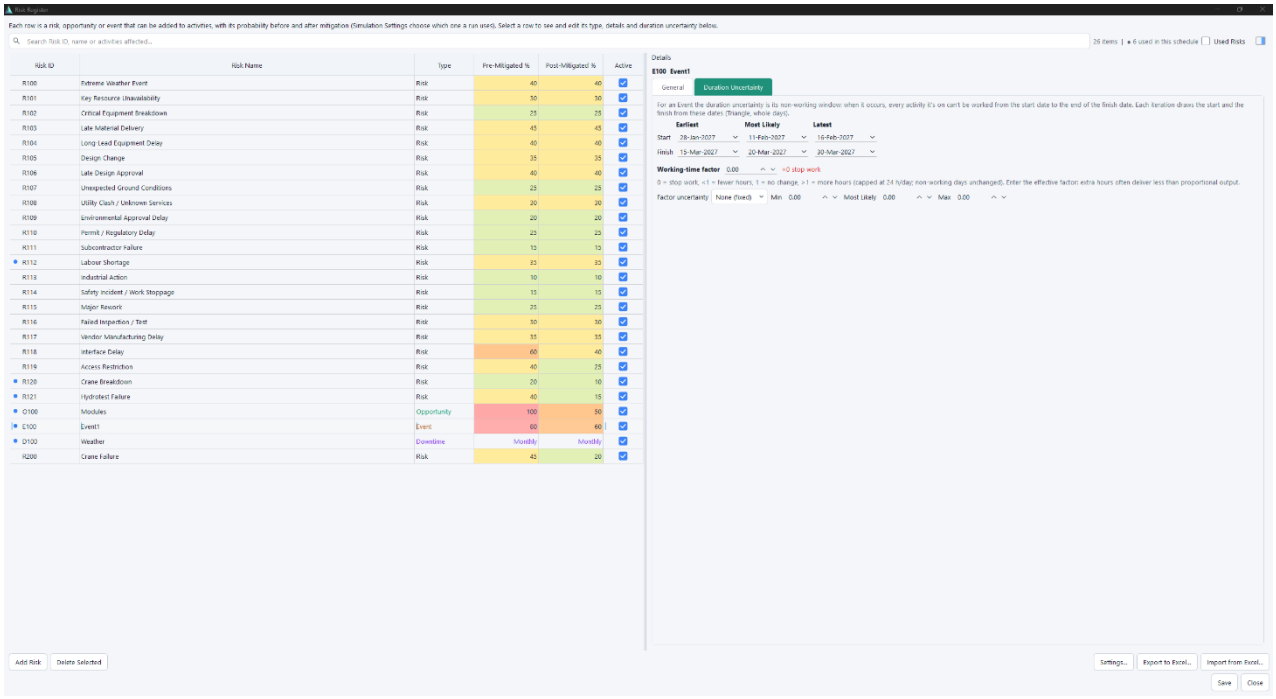


Figure 15 - Risk Register

Register Layout

The register lists every item, with these columns:

- **Risk ID**: A unique identifier (maximum 20 characters).
- **Risk Name**: A short description of the item.
- **Type**: Risk, Opportunity, Event or Downtime (see Risk Types below).

- **Pre-Mitigated %**: The probability of occurrence before mitigation.
- **Post-Mitigated %**: The probability of occurrence after mitigation. For Downtime items, both columns show *Monthly* because probabilities are set month by month.
- **Active**: Untick to exclude an item from the simulation without deleting it.

The simulation uses either the Pre-Mitigated or the Post-Mitigated probabilities, as selected in **Simulation Settings**. This lets you compare schedule exposure before and after mitigation.

Other controls:

- **Search**: Filter by Risk ID, name or affected activities.
- **Item count**: The header shows the total number of items and how many are used in the current schedule. Used items are marked with a blue dot. Tick **Used Risks** to show only those.
- **Details panel**: Select a row to view and edit it in the Details panel on the right, which has two tabs, **General** and **Duration Uncertainty**. The panel can be shown or hidden with the toggle at the top right.

Risk Types

Type	Effect on the schedule	Typical examples
Risk	Adds duration to the activities it is assigned to	Labour shortage, crane breakdown, hydrotest failure
Opportunity	Reduces duration (days saved) on the activities it is assigned to	Modularisation, early access, improved productivity
Event	Creates a non-working (or reduced-working) window between dates	Plant shutdown, cyclone season, industrial action
Downtime	Loses a number of calendar days in particular months, every year the schedule spans	Seasonal weather, wet season, recurring site closures



Figure 16 - Risk Types

General Tab

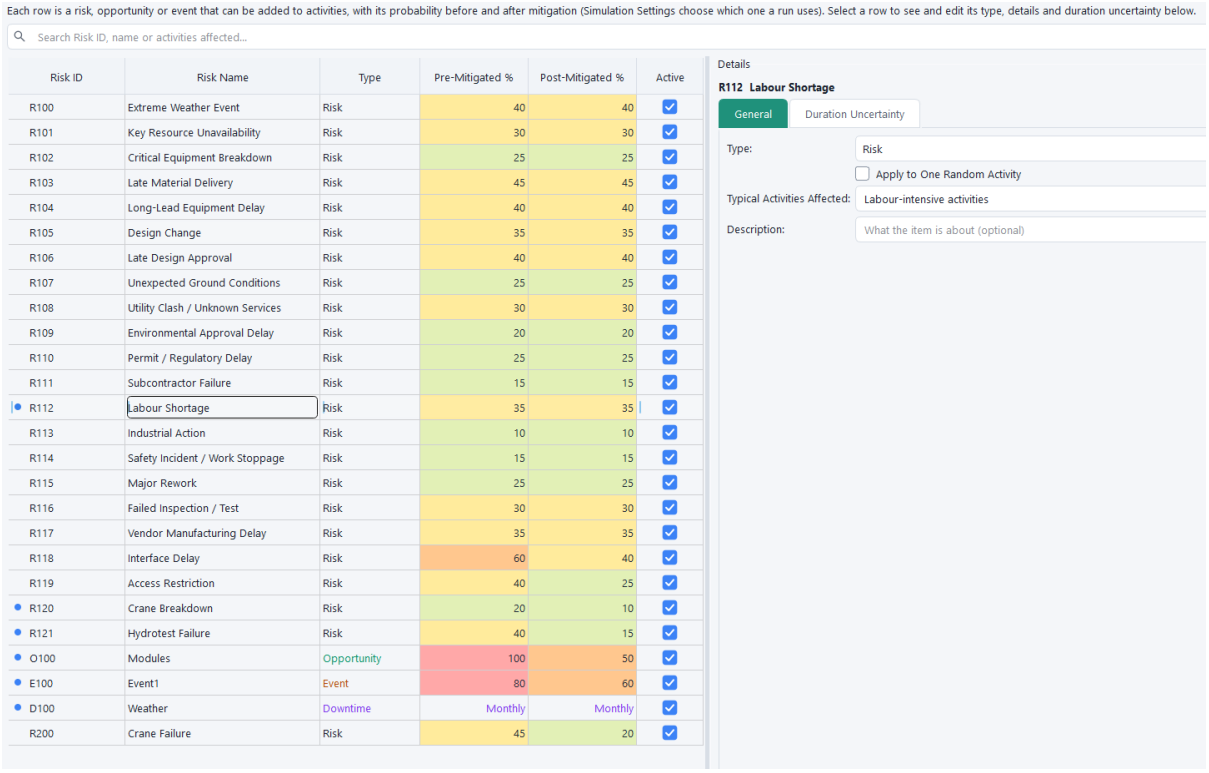


Figure 17 - Risk Register: General Tab

The General tab holds the basic details of the selected item:

- **Type**: Select Risk, Opportunity, Event or Downtime. The type determines what the Duration Uncertainty tab shows and how the item affects the schedule.
- **Apply to One Random Activity**: Controls how an item assigned to several activities is applied in each iteration:
    - **Unchecked** (default): If the item occurs, it is applied to every activity it is assigned to in that iteration.
    - **Checked**: If the item occurs, it is applied to only one of its assigned activities, chosen at random in each iteration.
- **Typical Activities Affected**: Optional notes on the kind of work the item usually affects, e.g. earthworks, concrete or lifting. This helps when assigning the item, and can be found using the register's search box.
- **Description**: An optional description of the item, such as its cause, trigger or mitigation.

Example - Apply to One Random Activity:

R121 *Hydrotest Failure* (40% probability) is assigned to five piping test packages. In practice, a failure is expected on only one of the packages, not all five at once.

- **Unchecked:** In iterations where R121 occurs, all five test packages are delayed. This overstates the impact.
- **Checked:** In iterations where R121 occurs, one test package is picked at random and delayed. Across the simulation, each package is hit in roughly a fifth of those iterations, which reflects how the risk is expected to play out.

Leave the option unchecked when one occurrence genuinely affects all assigned activities together, for example a labour shortage affecting every activity that uses the same crew.

Duration Uncertainty - Risks and Opportunities

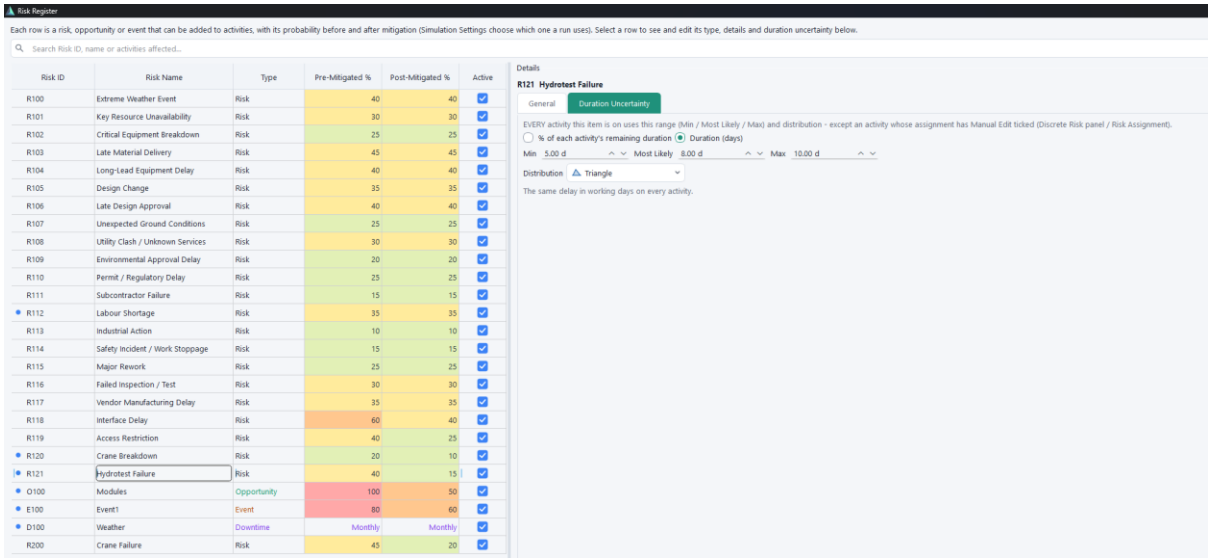


Figure 18 - Risk / Opportunity Duration Uncertainty

For a Risk or Opportunity, the Duration Uncertainty tab sets the impact range used on every activity the item is assigned to:

- **Impact basis**: Choose either **% of each activity's remaining duration** or **Duration (days)**. With Duration (days), the same delay in working days applies on every activity. For an Opportunity, the values are the days saved.
- **Min / Most Likely / Max**: The impact range.
- **Distribution**: The shape of the distribution, e.g. Triangle or BetaPert.

Editing at activity level: The register values are the default for all assigned activities. To use a different range or shape for one activity, open its **Discrete Risk** tab in the Activity Details panel (or use Risk Assignment) and tick **Manual Edit**. You can then change the distribution shape and the Min / Most Likely / Max for that activity only. All other activities continue to use the register values.

Duration Uncertainty - Events

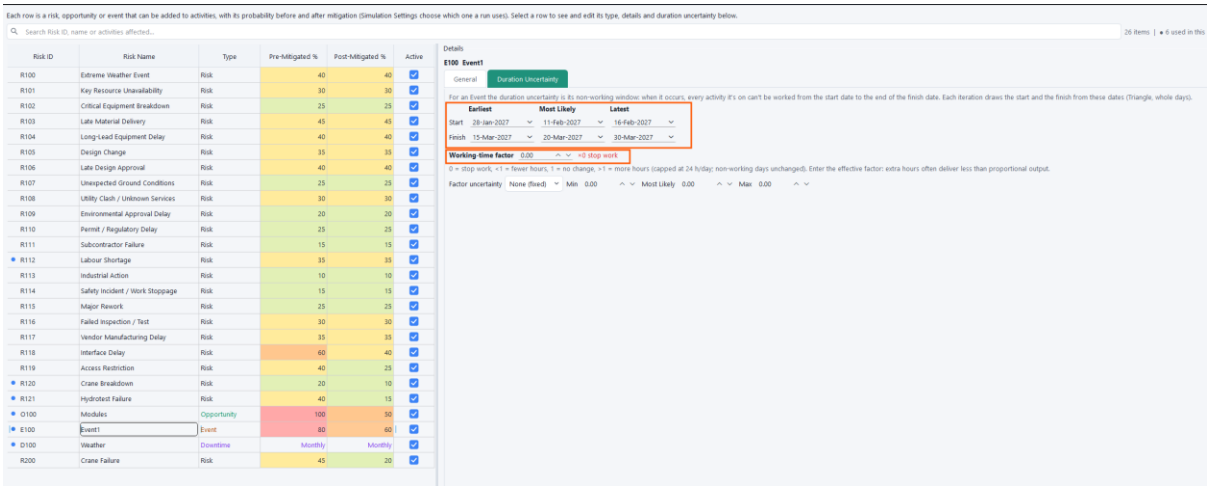


Figure 19 - Event Duration Uncertainty

An Event defines a **window of time** in which work is stopped or slowed. If the Event occurs in an iteration (based on its probability), every activity it is assigned to is affected from the start date to the end of the finish date.

- **Start and Finish dates**: Enter the Earliest, Most Likely and Latest values for both. Each iteration draws its own start and finish dates from these ranges, using a Triangle distribution in whole days.
- **Working-time factor**: Controls how much work can continue during the window:
    - **0**: Work stops.
    - **Less than 1**: Fewer working hours, e.g. 0.5 is half productivity.
    - **1**: No change.
    - **Greater than 1**: More working hours, capped at 24 h/day. Non-working days are unchanged.

Enter the *effective* factor. Extra hours often deliver less than proportional output, so 1.5× the hours may only give 1.3× the progress.

- **Factor uncertainty**: Leave as **None (fixed)** for a single factor, or select a distribution and enter Min / Most Likely / Max to vary the factor between iterations.

Example: E100 (80% pre-mitigated / 60% post-mitigated) represents a shutdown that most likely runs from 11-Feb-2027 to 20-Mar-2027, with a working-time factor of 0. In iterations where it occurs, the assigned activities cannot progress during the sampled window.

Events use the window from the register. At activity level they show as *Window* rather than a Min / Most Likely / Max range.

Duration Uncertainty - Downtime

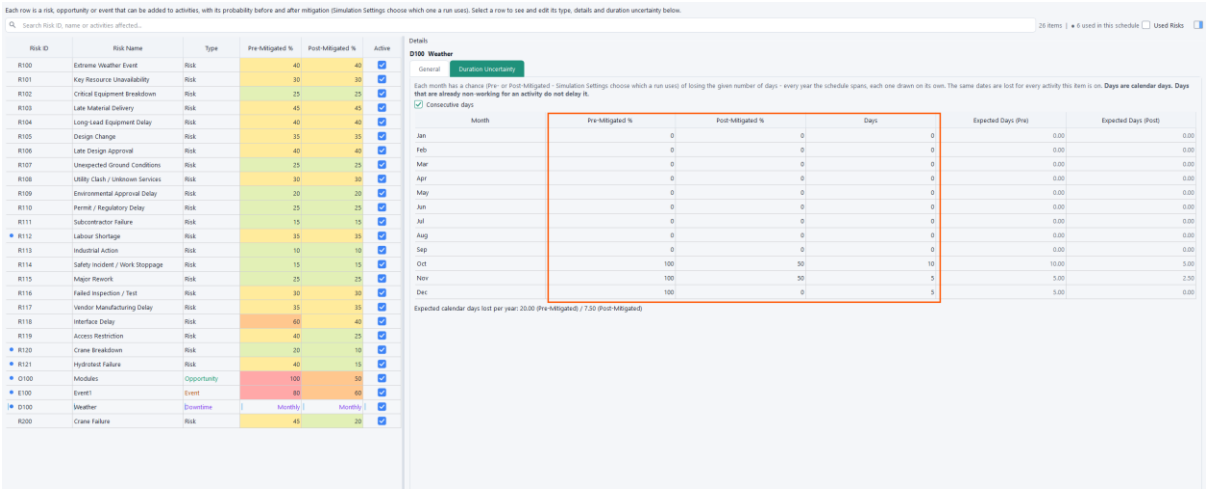


Figure 20 - Downtime Duration Uncertainty

Downtime models **recurring, seasonal loss of working days**, such as weather. Each month has its own probability of losing a set number of days, and this repeats every year the schedule spans. Each month is sampled independently.

For each month, enter:

- **Pre-Mitigated % / Post-Mitigated %**: The probability that downtime occurs in that month.
- **Days**: The number of calendar days lost if it occurs.

The **Expected Days (Pre / Post)** columns show probability × days for each month, and the total **expected calendar days lost per year** is shown below the table.

Rules applied during the simulation:

- The **same dates are lost for every activity** the Downtime item is assigned to, so affected activities are hit together.
- Days are **calendar days**. Days that are already non-working for an activity (e.g. weekends in its calendar) do not delay it.
- Tick **Consecutive days** to lose the days as one continuous block within the month, rather than spread across it.

Example: D100 Weather loses 10 days in October and 5 days each in November and December at 100% pre-mitigated. Post-mitigation, October and November drop to 50% and December to 0%. That gives an expected loss of 20.0 days/year pre-mitigated and 7.5 days/year post-mitigated.

Other Functions

- **Add Risk**: Create a new item. Enter the Risk ID, Risk Name and Type, then complete the General and Duration Uncertainty tabs.
- **Delete Selected**: Remove the selected item from the register.
- **Settings**: Set the default Min / Most Likely / Max impact (% of Remaining Duration) applied when a Risk or Opportunity is added to an activity (see Risk Register Settings).
- **Export to Excel / Import from Excel**: Export the register for external review, then import updates using the same template.
- **Save**: Keep the changes to the Risk Register.
- **Close**: Close the Risk Register.

Risk Register Settings

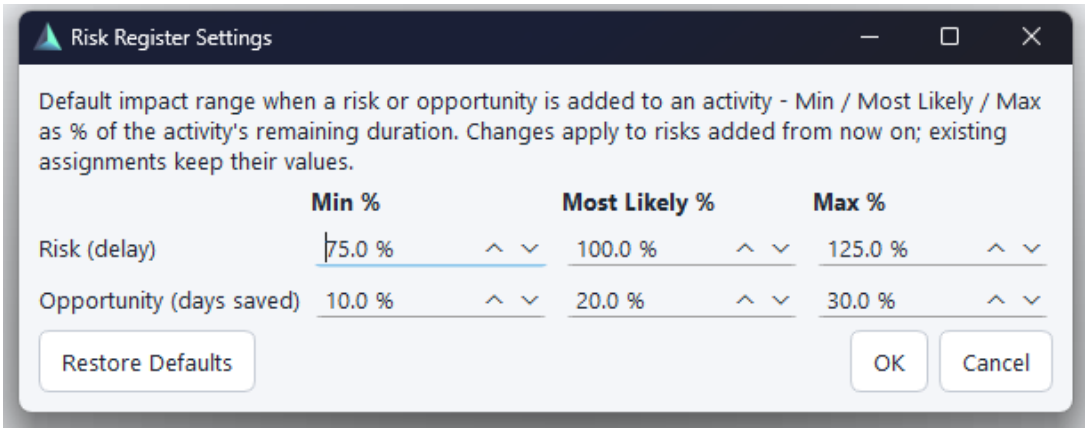


Figure 21 - Risk Register Settings

Click **Settings** in the Risk Register to set the **default impact range** used when a Risk or Opportunity is added to an activity. The values are Min / Most Likely / Max percentages of the activity's Remaining Duration.

Item	Min %	Most Likely %	Max %
Risk (delay)	75	100	125
Opportunity (days saved)	10	20	30

Example: For an activity with a Remaining Duration of 20 days:

- A Risk added with the default settings gives a delay of 15 / 20 / 25 days.
- An Opportunity added with the default settings saves 2 / 4 / 6 days.

Notes:

- Changes apply only to risks and opportunities added **from now on**. Existing assignments keep their current values.
- Events and Downtime are not affected, because they use their own date windows and monthly settings.
- **Restore Defaults** resets the values to the defaults shown above. Click **OK** to save or **Cancel** to discard.

Assigning Discrete Risks to Activities

Discrete risks defined in the **Risk Register** can be assigned to schedule activities in three ways: from the activity table's right-click menu, from the **Discrete Risk** panel, or by ticking **risk columns** in the activity table. The first two use the same **Add Risks** selection dialog. The third is the **quickest way** to assign risks across many activities or whole WBS levels.

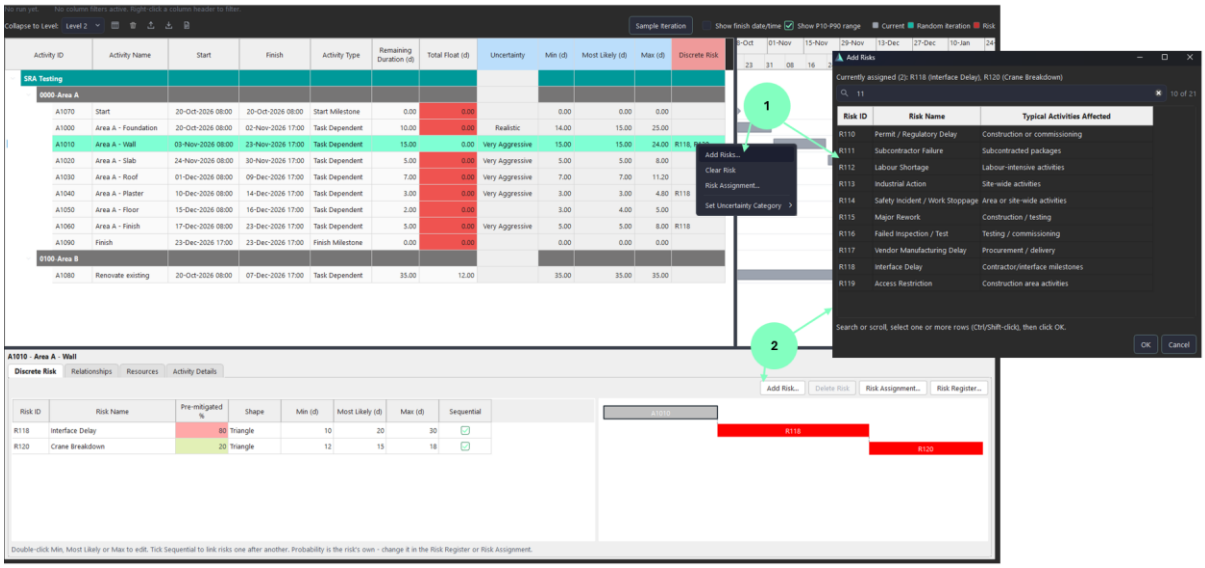


Figure 22 - Assigning Discrete Risks to Activities

① Add Risks from the Activity Table

1. Right-click the required activity row.
2. Select **Add Risks** from the context menu.
3. In the **Add Risks** dialog, use the search box to locate the required risk.
4. Select one or more risks and click **OK** or double-click a risk to add it.

Alternatively, double-click the activity's **Discrete Risk** cell to open the **Add Risks** dialog.

② Add Risks from the Discrete Risk Panel

1. Select the required activity in the SRA Schedule View.

2. Open the **Discrete Risk** tab in the bottom panel.
3. Click **Add Risk**.
4. Search for and select the required risk.
5. Click **OK**, or double-click the risk to add it.

③ Assign Risks Using Risk Columns

1. Click **Add Risk Columns** in the toolbar to open the **Add Risk Columns** dialog, and choose the risks you will use in this SRA. Columns can be added or removed at any time. Risks already assigned in the schedule are selected to start with.
    - **Risk Register** (left) - Lists the available risks.
    - **Risk Columns** (right) - Lists the risks that will be shown as columns. Events, Opportunities and Downtime are colour-coded and labelled with their type.
    - Use **>** to add the selected risk, **>>** to add all risks, **<** to remove the selected risk and **<<** to remove all risks.
    - Use **Move Up** and **Move Down** to set the column order.
    - **Column Header** - Choose what the column headers display, e.g. **Risk Name**.
    - Click **OK** to add the columns to the activity table. The **Risks (n)** header above the columns can be expanded or collapsed.

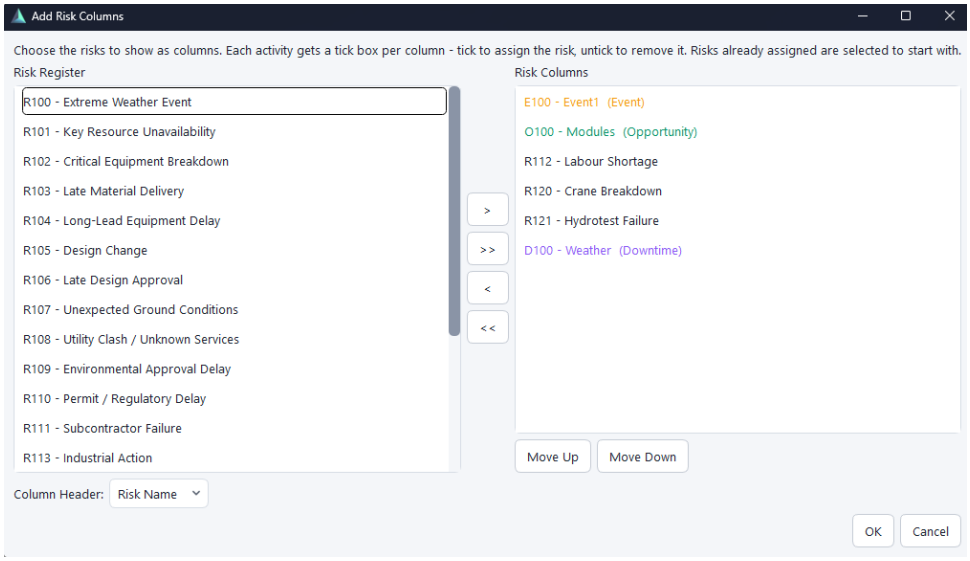


Figure 23 - Add Risk Columns

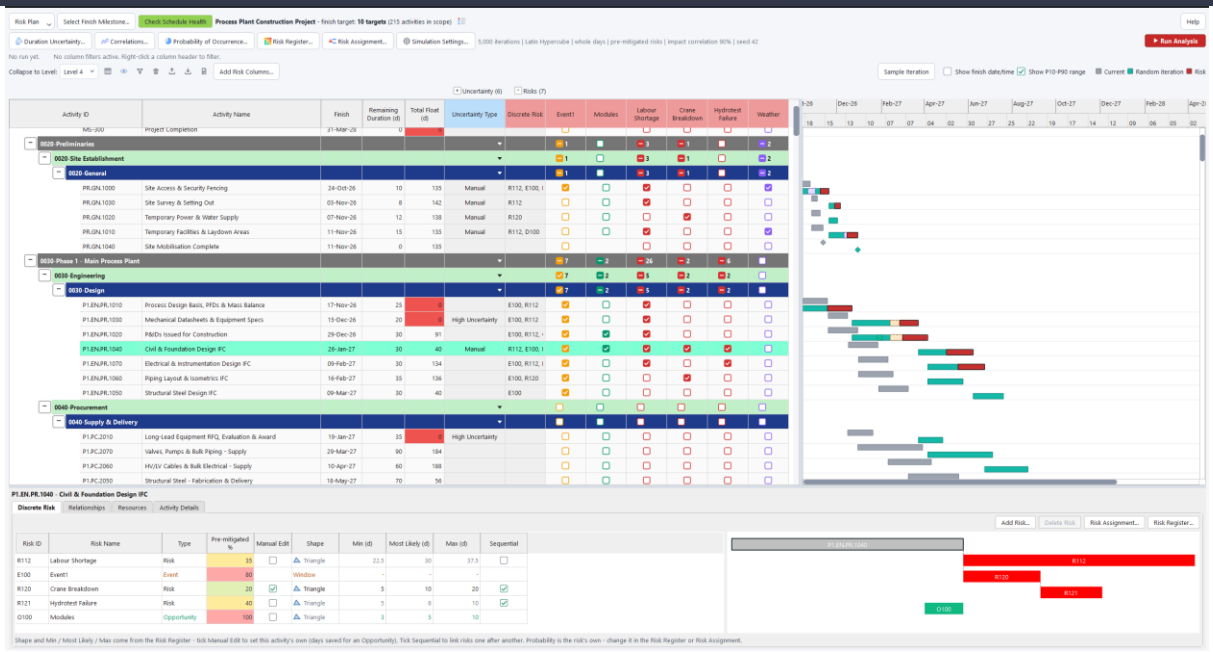


Figure 24 - Assigning Risks Using Risk Columns

2. Tick or untick the boxes to assign or remove a risk:
    - **Activity level** - Tick the box on an activity row to assign the risk to that activity only. Untick it to remove the risk.
    - **WBS level** - Tick the box on a WBS row to assign the risk to every activity under that WBS. Untick it to remove the risk from all of them.
3. WBS rows show the assignment status of their child activities:
    - **Ticked** - The risk is assigned to all activities under the WBS.
    - **Partial (-) with a count** - The risk is assigned to some activities, and the count shows how many (e.g. -5).
    - **Empty** - The risk is not assigned to any activity under the WBS.

Each column is colour-coded by risk type, and the risk impacts are shown on the Gantt chart.

Whichever method is used, the assigned risks appear in the activity's **Discrete Risk** panel and in the **Discrete Risk** column of the activity table.

Important - Risk Assignment Rules

- Each risk can be assigned **only once to the same activity**.
- Multiple different risks can be assigned to a single activity.
- The same risk can be assigned to multiple activities across the schedule.

Once assigned, the risk's duration impact and sequencing can be reviewed and adjusted in the **Discrete Risk** panel.

Discrete Risk - Duration Uncertainty and Sequencing

Once discrete risks are assigned to an activity, review their **duration impact** and **sequencing** in the **Discrete Risk** panel.

The **probability of occurrence** belongs to the risk. It is set in the **Risk Register** and applies wherever that risk is assigned. The **duration impact** (Shape and Min / Most Likely / Max) also comes from the Risk Register by default, but it can be overridden for an individual activity.

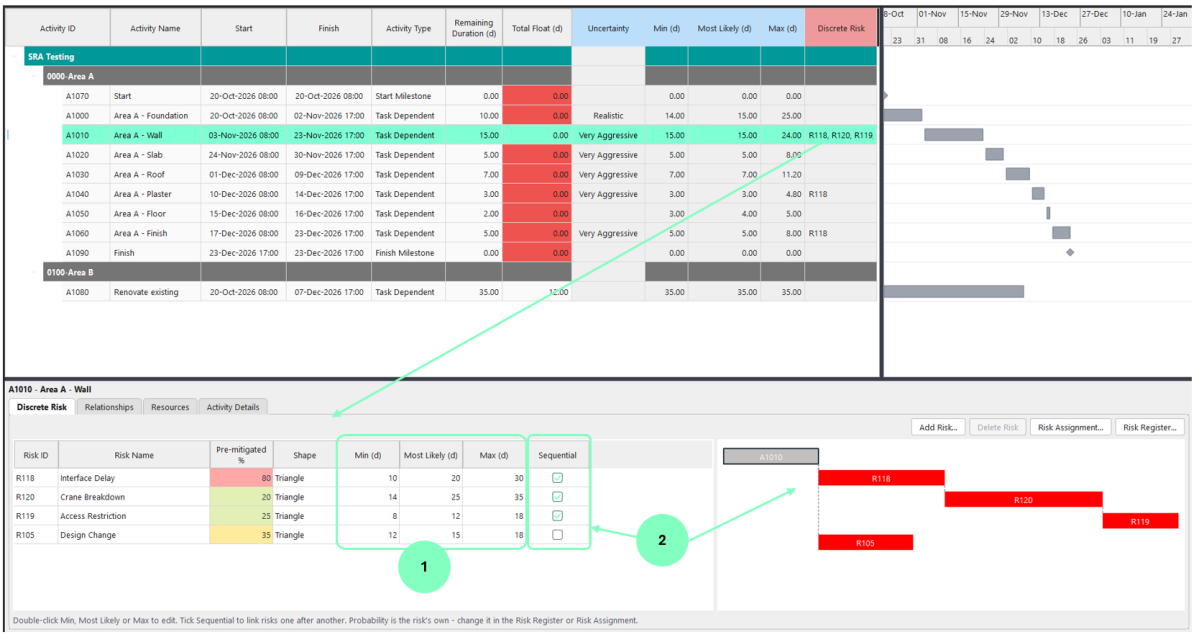


Figure 25 - Configuring Discrete Risk Duration and Sequencing

① **Risk Duration Uncertainty** - Select the activity and open the **Discrete Risk** tab. Each assigned item shows its Risk ID, Name, Type, probability, Shape and Min / Most Likely / Max.

- By default, the Shape and Min / Most Likely / Max come from the item's settings in the **Risk Register**. Opportunity values are days or percentages saved.
- To set different values for this activity only, tick **Manual Edit**. You can then change the distribution **Shape** and the **Min / Most Likely / Max** duration. Values are validated to ensure **Min ≤ Most Likely ≤ Max**.
- Manual values apply only to this activity. Other activities with the same risk continue to use the Risk Register values.
- **Events** show **Window** in the Shape column, because their impact is the non-working window defined in the Risk Register rather than a duration range.

- The default impact for newly added risks and opportunities is set in **Risk Register Settings** (default 75% / 100% / 125% of the activity's Remaining Duration for risks, and 10% / 20% / 30% for opportunities).

② **Risk Sequencing** - Controls how multiple risks assigned to the same activity are linked in the simulation network.

When a risk is assigned, it is automatically linked to the activity using a **Finish-to-Start (FS)** relationship.

- **Sequential (Checked)** - The risk is linked to the previous risk with a Finish-to-Start relationship, so their duration impacts occur one after another. This can result in a greater cumulative schedule impact.
- **Sequential (Unchecked)** - The risk is linked directly to the activity rather than to the other risks, allowing its impact to occur in parallel.

The right-hand diagram shows the risk relationships and sequencing for the selected activity. Risks are shown in red and opportunities in green.

Note: Risk sequencing can significantly influence the simulated finish dates. Sequential risks accumulate their duration impacts, while parallel risks may overlap, reducing their combined effect on the schedule.

Removing Discrete Risks from Activities

Discrete risks can be removed from a single activity, from a group of activities under a WBS, or one risk at a time.

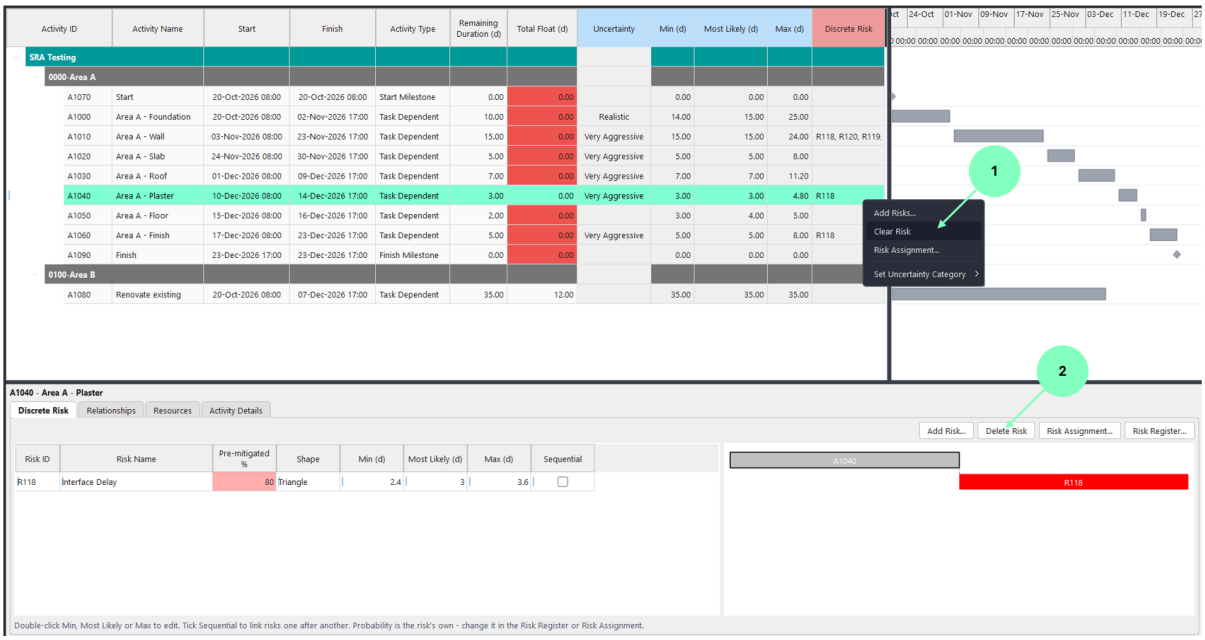


Figure 26 - Removing Discrete Risks from Activities

① Clear All Risks from an Activity

1. Right-click the required activity in the SRA Schedule View.
2. Select **Clear Risk** from the context menu.
3. Confirm the action to remove all discrete risks assigned to that activity.

Note: This option removes **all assigned risks** from the selected activity, including multiple risks if present.

② Remove an Individual Risk

1. Select the required activity in the SRA Schedule View.
2. Open the **Discrete Risk** tab in the bottom panel.
3. Select the specific risk to be removed.
4. Click **Delete Risk** to remove only the selected risk.

This method provides more control when an activity has multiple assigned risks.

③ Remove Using Risk Columns

- **Activity level** - Untick the risk's box on the activity row to remove that risk from the activity.
- **WBS level** - Untick the risk's box on a WBS row to remove that risk from every activity under the WBS.

One Risk Assigned to Multiple Activities

When a discrete risk is assigned to multiple activities, it is important to define **how the risk occurrence and its duration impacts are related across those activities** during the simulation.

As explained in the Discrete Risks - Risk Register section, the **Apply to One Random Activity** option determines whether a risk affects only one randomly selected assigned activity per iteration.

When this option is **Unchecked (default)**, the risk can affect multiple activities within the same iteration. Schedule Prism provides additional controls to model whether the risk occurrences and impacts are independent or correlated.

These settings can be managed through the **Risk Assignment** dialog.

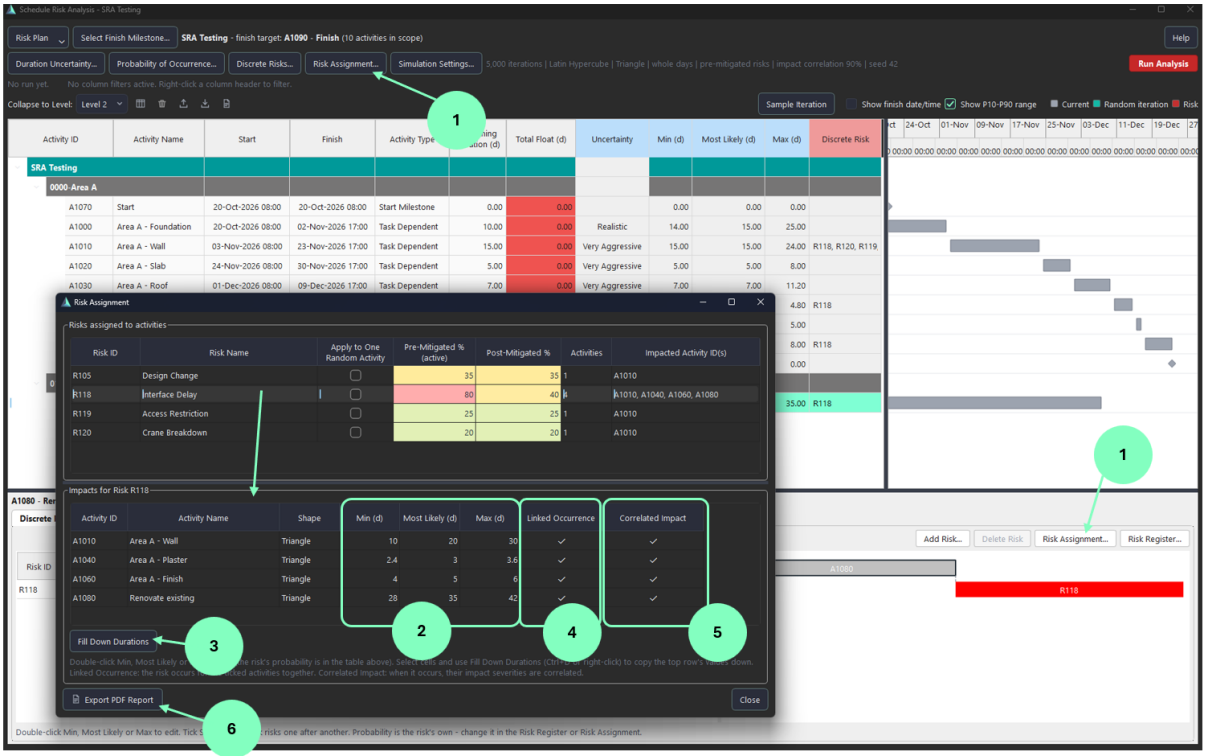


Figure 27 - Risk Assignment and Correlation Settings

① Open Risk Assignment

Click **Risk Assignment** from the SRA toolbar or the Discrete Risk panel.

The dialog displays all risks currently assigned to activities, including their occurrence probabilities and the number of affected activities.

Select a risk to display its assigned activities in the bottom panel.

For example, **Risk R118 - Interface Delay** is assigned to four activities.

② Duration Uncertainty by Activity

The same risk can have different duration impacts on different activities.

In the bottom panel, double-click the **Min, Most Likely or Max** cells to update the duration uncertainty for each activity.

③ Fill Down Durations

If multiple activities require the same duration uncertainty values:

1. Enter the required Min, Most Likely and Max durations in the first row.
2. Select the required cells.
3. Click **Fill Down Durations**, or right-click and select **Fill Down**.

This copies the duration values to the selected activities, avoiding repetitive manual entry.

④ **Linked Occurrence**

Controls whether the same risk occurs together across the selected activities.

- **Checked:** Risk occurrence is linked. If the risk occurs in an iteration, it affects all activities with Linked Occurrence enabled.
- **Unchecked:** Risk occurrence is evaluated independently for that activity using the risk's probability.

Example: Risk R118 has an 80% occurrence probability and is assigned to four activities.

If all four activities have **Linked Occurrence** enabled, they share the same occurrence outcome in each iteration. Either all four are affected or none are affected (20%).

If Linked Occurrence is disabled for all four, each activity's occurrence is evaluated independently, so the risk may affect one, several, all or none of the activities.

⑤ **Correlated Impact**

Controls whether the **severity of the risk's duration impact** is correlated across activities.

- **Checked:** Risk impact severity is correlated. If one activity experiences a high-end duration impact, other correlated activities tend to experience impacts toward the high end of their respective duration ranges.
- **Unchecked:** Risk impact durations are sampled independently for that activity.

Example: The same risk is assigned to two activities with different duration ranges:

- Activity A: 10-20-30 days
- Activity B: 5-10-15 days

With **Correlated Impact** enabled, a simulation producing a high-end impact for Activity A will tend to produce a high-end impact for Activity B as well.

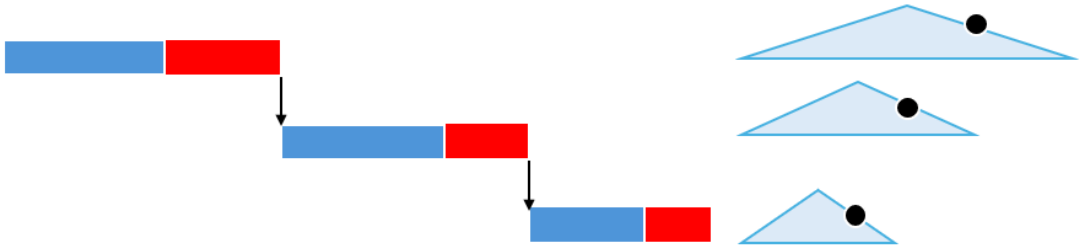


Figure 28 - Correlated Impact

The activities retain their own duration ranges; correlation links the severity of the impacts, not the actual duration values.

Note: The strength of the impact correlation is controlled through Shared Impact Correlation in the Simulation Settings (default 90%).

Without **Correlated Impact**, Risk impact durations are sampled **independently** for that activity.

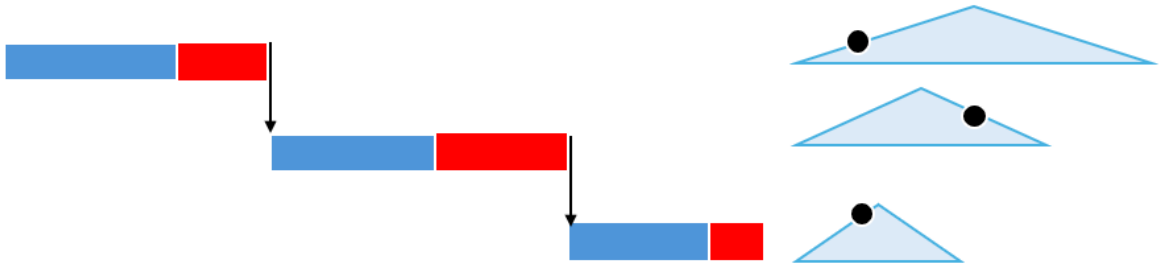


Figure 29 - Independent Impacts

⑥ Export PDF Report

Click **Export PDF Report** to generate a report of the risk assignments and their associated settings.

Understanding the Difference

Setting	Controls
Apply to One Random Activity	Limits the risk to one randomly selected assigned activity per iteration when it occurs.
Linked Occurrence	Controls whether the risk occurs together across selected activities.

Correlated Impact	Controls whether the severity of duration impacts is correlated across selected activities.

Important: Linked Occurrence and Correlated Impact control two different aspects of risk behaviour. A risk can occur simultaneously across multiple activities while producing independently sampled duration impacts, or it can have both linked occurrence and correlated impact.

These options allow Schedule Prism to model common risk events affecting multiple activities more realistically, rather than treating every risk assignment as a completely independent event.

Sample Iteration

The **Sample Iteration** feature allows users to visualise how the schedule behaves during a single randomly generated simulation iteration.

It demonstrates how **duration uncertainty and discrete risks** affect activity durations, how multiple risks accumulate on an activity, and how these impacts influence the overall schedule and milestone finish dates.

The Gantt chart uses different colours to distinguish between the original schedule and the simulated results:

- **Grey Bars - Current Schedule:** Represent the original deterministic schedule dates and durations, which remain unchanged.
- **Green Bars - Simulated Activities:** Represent the simulated activity durations and dates after applying duration uncertainty.
- **Red Bars - Discrete Risk Impacts:** Represent the additional duration caused by discrete risks. Where multiple risks affect the same activity, the red bar shows their combined duration impact.

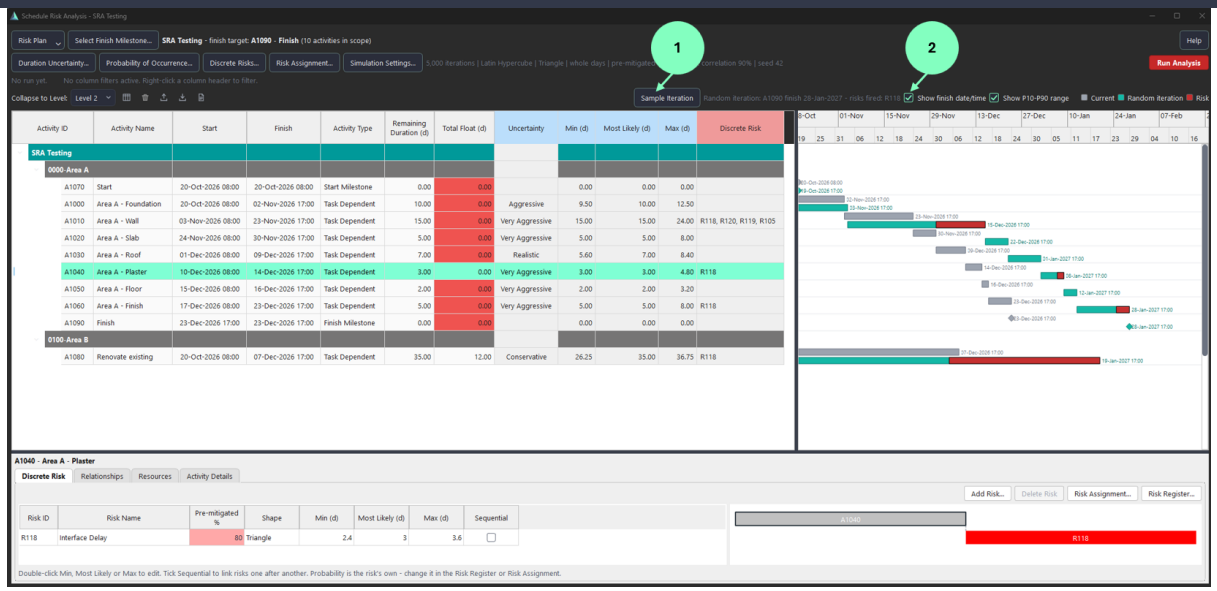


Figure 30 - Sample Iteration Gantt View

① Generate Sample Iteration

Click **Sample Iteration** to generate a random simulation iteration and update the Gantt chart.

Each click generates a new random iteration, allowing users to observe different combinations of duration uncertainty and risk occurrences.

The Gantt chart updates to show the resulting activity dates, risk impacts and milestone finish dates.

Click repeatedly to explore how different risk scenarios affect the schedule.

② Show Finish Date/Time

Select **Show finish date/time** to display the simulated activity finish dates directly on the Gantt chart.

This makes it easier to compare the original and simulated dates and understand how delays propagate through the schedule.

Note: Sample Iteration is intended to help users visualise and understand the simulation behaviour. It represents one possible schedule outcome, not the overall probabilistic results. The full simulation evaluates thousands of iterations to calculate the probability distributions and confidence levels.

Risk Analysis

Simulation Settings

The **Simulation Settings** dialog allows users to configure how Schedule Risk Analysis (SRA) simulations are performed, including the number of iterations, sampling method, risk probabilities and correlation settings.

① Open Simulation Settings

Click **Simulation Settings** on the SRA toolbar to open the configuration dialog.

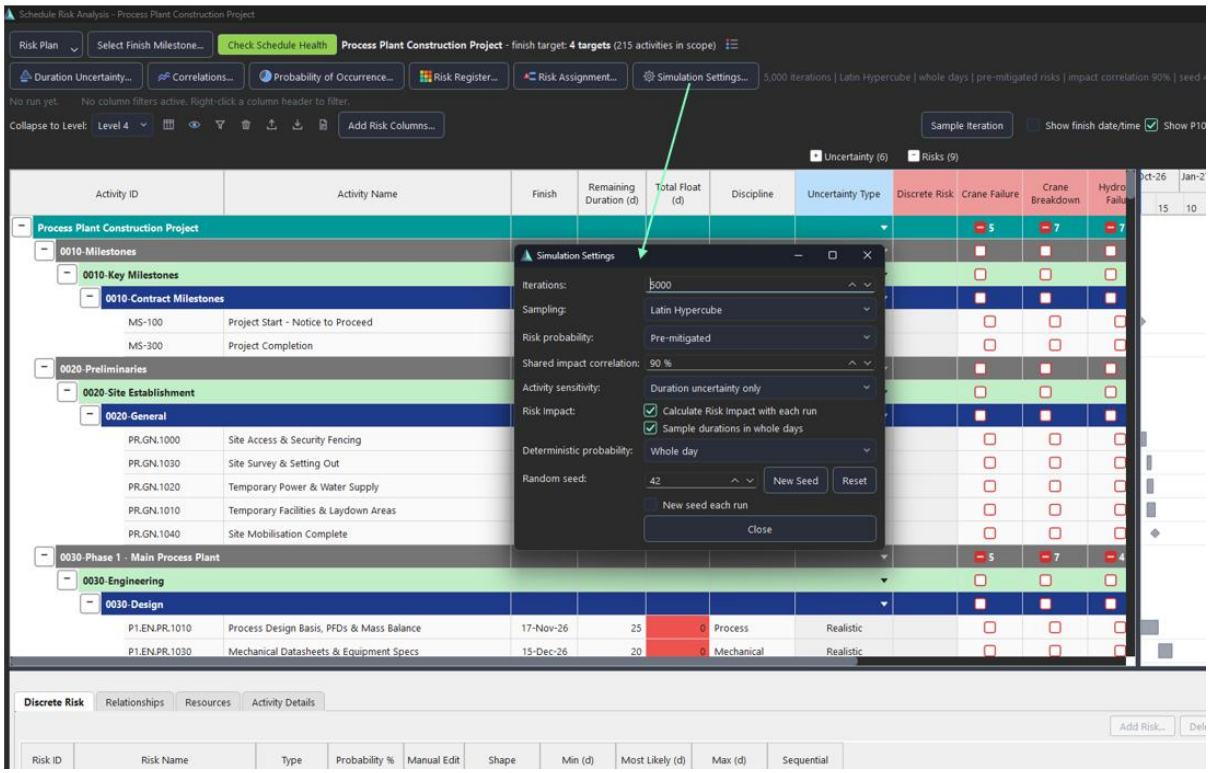


Figure 31 - Schedule Risk Analysis Simulation Settings

Simulation Parameters

Number of Iterations

Defines how many simulation iterations will be performed.

- **Default:** 5,000 iterations.
- Increasing the number of iterations generally improves the stability of the statistical results but requires more processing time.

Sampling Method

Determines how random values are generated during the simulation.

- **Monte Carlo:** Uses independent random sampling to generate simulation outcomes.
- **Latin Hypercube:** Uses stratified sampling to provide more even coverage of the probability distributions, potentially improving statistical stability with fewer iterations.

Risk Probability

Determines which occurrence probability is used for discrete risks, as defined in the Risk Register.

- **Pre-mitigated:** Uses the probability before risk mitigation measures.
- **Post-mitigated:** Uses the probability after risk mitigation measures.

This allows users to compare schedule risk exposure before and after mitigation.

Shared Impact Correlation

Defines the strength of correlation between duration impacts when the same risk is assigned to multiple activities with **Correlated Impact** enabled.

- **Default:** 90%.
- A higher percentage produces more strongly correlated impact severities across the affected activities.
- A lower percentage allows greater variation between their impacts.

For example, with 90% correlation, if one activity experiences a high-severity impact, other correlated activities are also likely to experience relatively high-severity impacts within their respective duration ranges.

Activity Sensitivity

Sets what the activity sensitivity results measure, on the **Criticality & Sensitivity** tab and in the dashboard's **Top Activity Sensitivity Drivers** visual.

- **Duration uncertainty only** (default): Sensitivity is calculated from each activity's duration uncertainty alone, excluding discrete risk impacts. This shows which activities' estimates drive the finish date. The effect of discrete risks is shown separately on the **Risk Impact** tab and in the **Top Discrete Risk Sensitivity Drivers** visual.
- **Include Discrete Risk impacts**: Sensitivity is calculated from each activity's total simulated duration, including the delays from its assigned discrete risks. Activities that carry high-impact risks rank higher.

Calculate Risk Impact with Each Run

Ticked by default. After the main simulation, Schedule Prism reruns it on the same random draws with one item removed each time: each risk, all opportunities together, and duration uncertainty. The results fill the **Risk Impact** tab. Each item adds an extra pass, so runs take longer as the Risk Register grows. If you untick this setting, the main results are unchanged and only the Risk Impact tab is left empty. Untick it for quick test runs.

Sample Durations in Whole Days

When enabled, randomly sampled durations are restricted to whole-day values rather than fractional days.

This setting controls the precision of the sampled duration values used in the simulation.

Deterministic Probability

Determines how the probability of achieving the original deterministic schedule finish date is calculated.

- **Whole Day:** Counts simulated finishes occurring on the same calendar date as the deterministic finish as on time, regardless of the time of day.
- **Exact Time:** Counts only simulated finishes occurring at or before the exact deterministic finish date and time.

For example, if the deterministic finish is **30 June at 17:00** and a simulated finish is **30 June at 19:00**:

- **Whole Day:** Considered on time.
- **Exact Time:** Considered late.

This setting can affect the reported probability of achieving the deterministic finish date.

Random Seed

Controls the random number sequence used during the simulation.

- **Fixed Seed:** Using the same seed with unchanged simulation inputs and settings allows the same random sampling sequence to be reproduced.
- **New Seed:** Generates a different seed for subsequent simulations.
- **New Seed Each Run:** Automatically uses a new seed for every simulation.
- **Reset:** Restores the default seed.

Different seeds may produce slightly different results because each simulation generates a different set of random samples. However, with a sufficient number of iterations, the overall statistical results should remain consistent.

Run Schedule Risk Analysis

Once the duration uncertainty, discrete risks and simulation settings have been configured, the **Schedule Risk Analysis (SRA)** can be executed.

Schedule Prism runs the simulation for the specified number of iterations, calculating the possible activity and milestone finish dates based on the defined uncertainties and risk impacts.

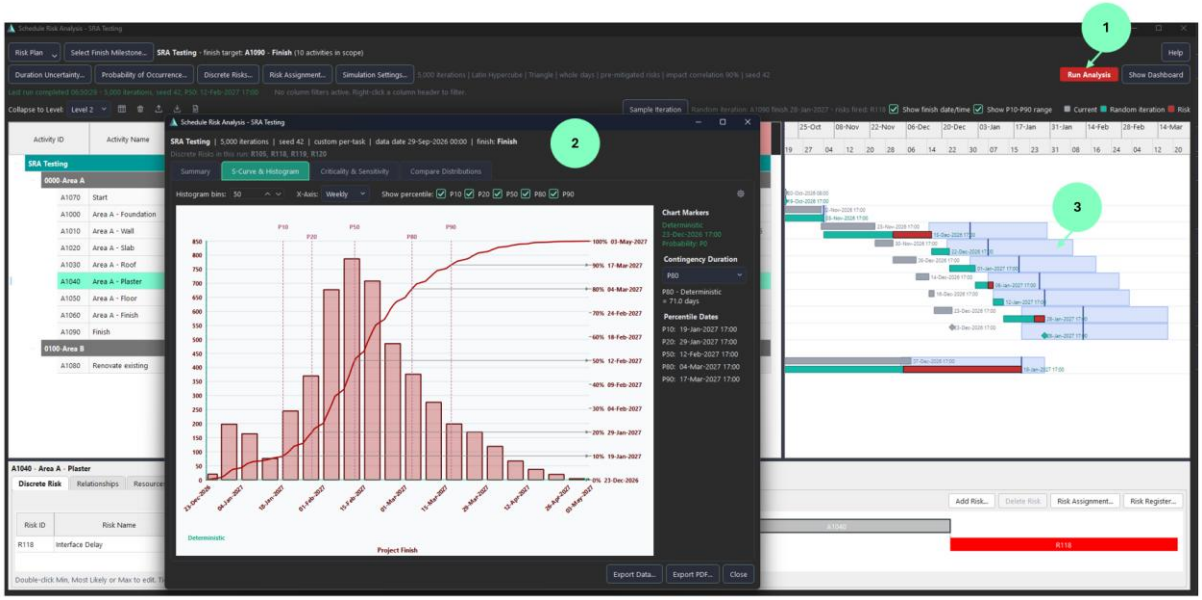


Figure 32 - Running Schedule Risk Analysis and Viewing Results

① Run Analysis

Click **Run Analysis** to start the simulation.

Schedule Prism performs the configured number of iterations, considering activity duration uncertainty, discrete risk occurrences, risk correlations and schedule logic.

② SRA Results

Once the simulation is complete, the **SRA Results** window opens automatically. It shows the finish-date distribution, P-dates and contingency, together with criticality, sensitivity and risk impact (see SRA Results).

③ P10-P90 Range on the Gantt Chart

After completing the simulation, Schedule Prism displays the simulated **P10-P90 finish date range** for each activity on the Gantt chart.

- **Light Blue Range** - Represents the simulated P10-P90 finish date range.
- **Vertical Blue Line** - Indicates the P50 (median) simulated finish date.

This allows users to visually identify activities with wider uncertainty ranges and understand how schedule risks may affect activity completion dates.

Note: The P10-P90 range represents the central 80% of simulated finish date outcomes. It does not represent the earliest or latest possible finish dates.

SRA Results

The **SRA Results** window opens when a simulation run finishes. It shows how likely each selected finish milestone is to be achieved by a given date, and what drives that result.

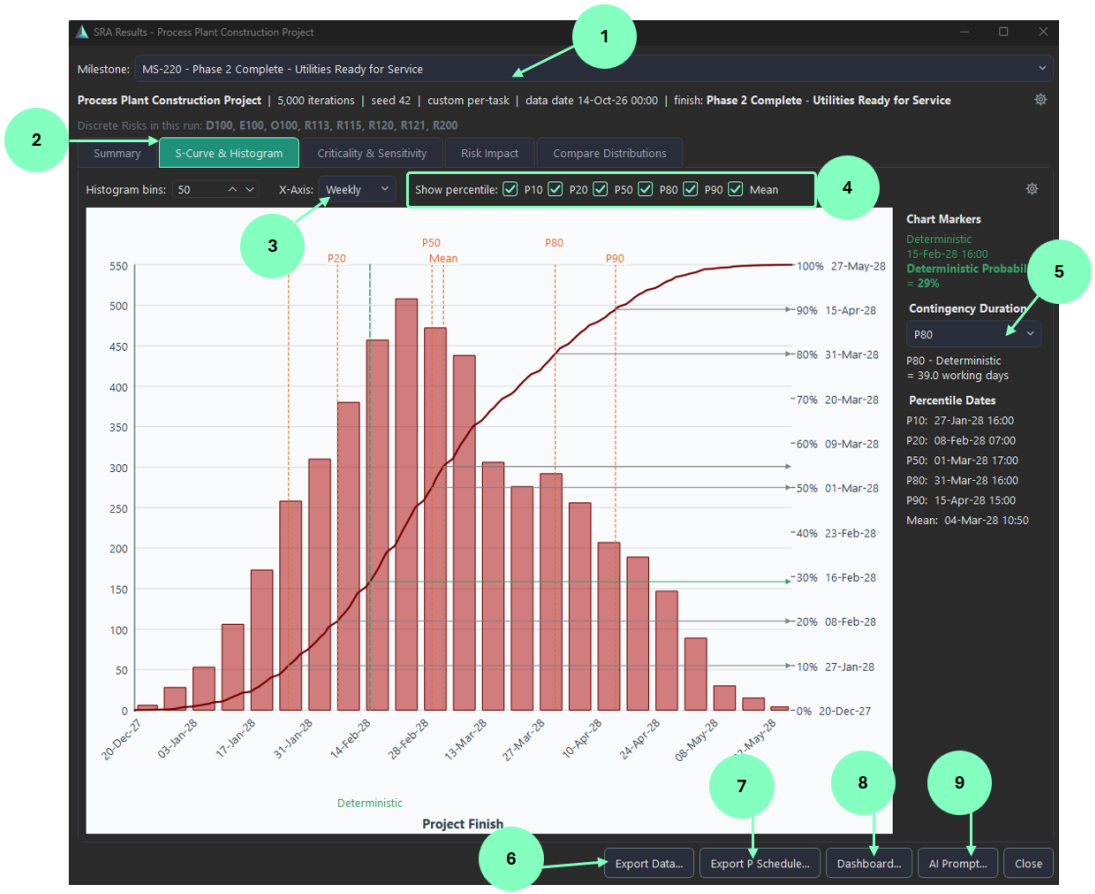


Figure 33 - SRA Results: S-Curve & Histogram

① Milestone

Select the finish milestone to report on. This selector appears only when the run includes more than one milestone. Every tab, chart and export uses the milestone selected here.

The header below the selector summarises the run settings: the number of iterations, the random seed, the sampling option, the data date and the finish activity. The **Discrete Risks in this run** line lists the risks included in the simulation.

② **Tabs**

- **Summary**: Headline finish dates, the deterministic finish and model checks.
- **S-Curve & Histogram**: The distribution of finish dates (shown in Figure 33).
- **Criticality & Sensitivity**: The activities most often critical, and those that drive the finish date.
- **Risk Impact**: The working days each discrete risk adds to the finish, and the days each opportunity saves.
- **Compare Distributions**: Save the run as a named scenario and compare it with other saved scenarios.

③ **Histogram Bins and X-Axis**

- **Histogram bins**: The number of bars in the histogram.
- **X-Axis**: The date spacing along the horizontal axis, e.g. Weekly.

④ **Show Percentile**

Tick or untick **P10, P20, P50, P80, P90** and **Mean** to show or hide their marker lines on the chart. Click the **gear icon** to change the chart's format.

⑤ **Chart Markers and Contingency Duration**

The **Chart Markers** panel summarises the key results for the selected milestone:

- **Deterministic**: The planned finish date without uncertainty or risks.
- **Deterministic Probability**: The chance of finishing on or before the deterministic date (e.g. 29%).
- **Contingency Duration**: Select a percentile to see the schedule contingency it requires. This is the gap between the percentile date and the deterministic finish, in working days by default (e.g. *P80 - Deterministic = 39.0 working days*).
- **Percentile Dates**: The P10, P20, P50, P80, P90 and Mean finish dates.

Click the **gear icon** at the right of the chart toolbar to format the charts (see Formatting SRA Charts).

⑥ **Export Data**

Export the simulated finish date for each milestone in every iteration to Excel. This is the raw data behind the S-curve and histogram.

⑦ **Export P Schedule**

Export a complete schedule at a chosen percentile to Excel.

1. Select the milestone at the top of the window (①).
2. Click **Export P Schedule** and choose the **Percentile** (default P80).
3. Choose where to save the file. It opens automatically when the export finishes.

The file lists every activity with its deterministic **Start** and **Finish**, and its **Pn_Start** and **Pn_Finish**. The Pn dates come from the simulated iteration in which the selected milestone finishes on its Pn date.

⑧ **Dashboard**

Open the **SRA Dashboard** to build a custom report from this run's results. You can add visuals, rearrange, resize and format them, save layouts and export the dashboard to PDF (see SRA Dashboard - Building a Custom Risk Dashboard).

⑨ **AI Prompt**

Build a ready-made prompt containing this run's results, for use with an AI assistant.

1. Click **AI Prompt**
2. If the run has several milestones, choose **All milestones** or **Current milestone only**.
3. Click **Copy to Clipboard** or **Save as Text**
4. Paste the prompt into your preferred AI chat to generate a schedule risk analysis report.

Important: The prompt contains project data. Review it before sharing it outside your organisation.

Note:

- **Export Data** and **Export P Schedule** are hidden on the **Compare Distributions** tab.
- **Export P Schedule** is not available for results reopened from a saved Risk Plan. Run the simulation again to use it.

SRA Report Settings

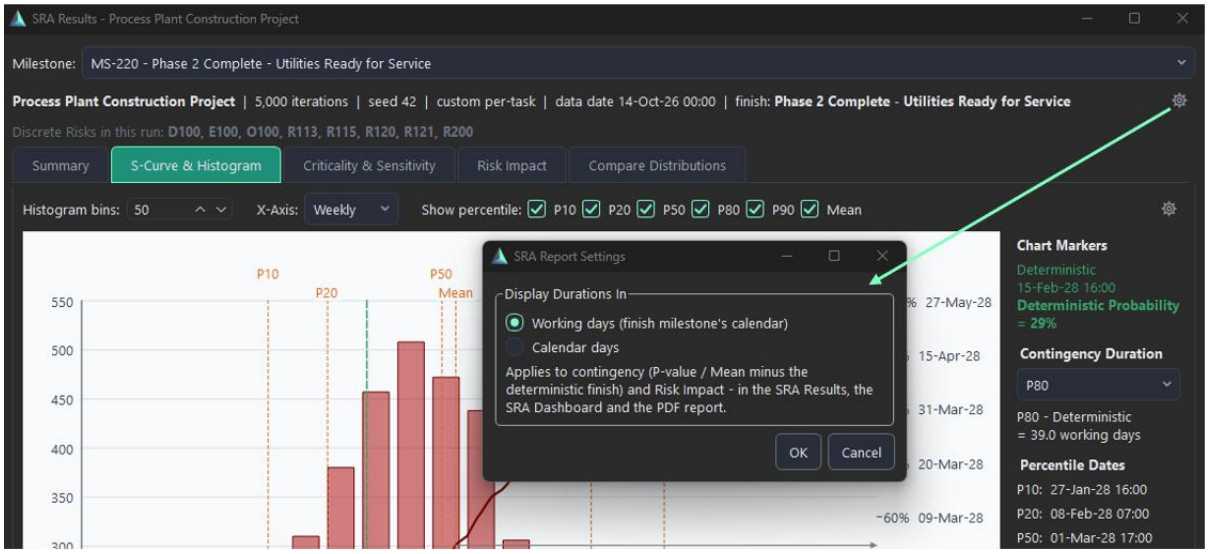


Figure 34 - SRA Report Settings

Click the **gear icon** at the far right of the header line to open **SRA Report Settings**. Here you choose the units used to display contingency and risk impact durations.

Display Durations In

- **Working days (finish milestone's calendar)** (default): Durations are counted in working days, using the calendar of the selected finish milestone.
- **Calendar days**: Durations are counted in calendar days, including non-working days.

The setting applies to:

- **contingency**, which is the P-value or Mean minus the deterministic finish (e.g. *P80 - Deterministic*), and
- **Risk Impact** values.

It is used consistently in the **SRA Results**, the **SRA Dashboard** and the **PDF report**. Click **OK** to apply it.

Example: A P80 contingency of 39.0 working days on a 5-day-week calendar is shown as about 55 calendar days.

Tip: Use calendar days when reporting to stakeholders who think in elapsed time. Use working days when the contingency will be added back into the schedule as working duration.

Formatting SRA Charts

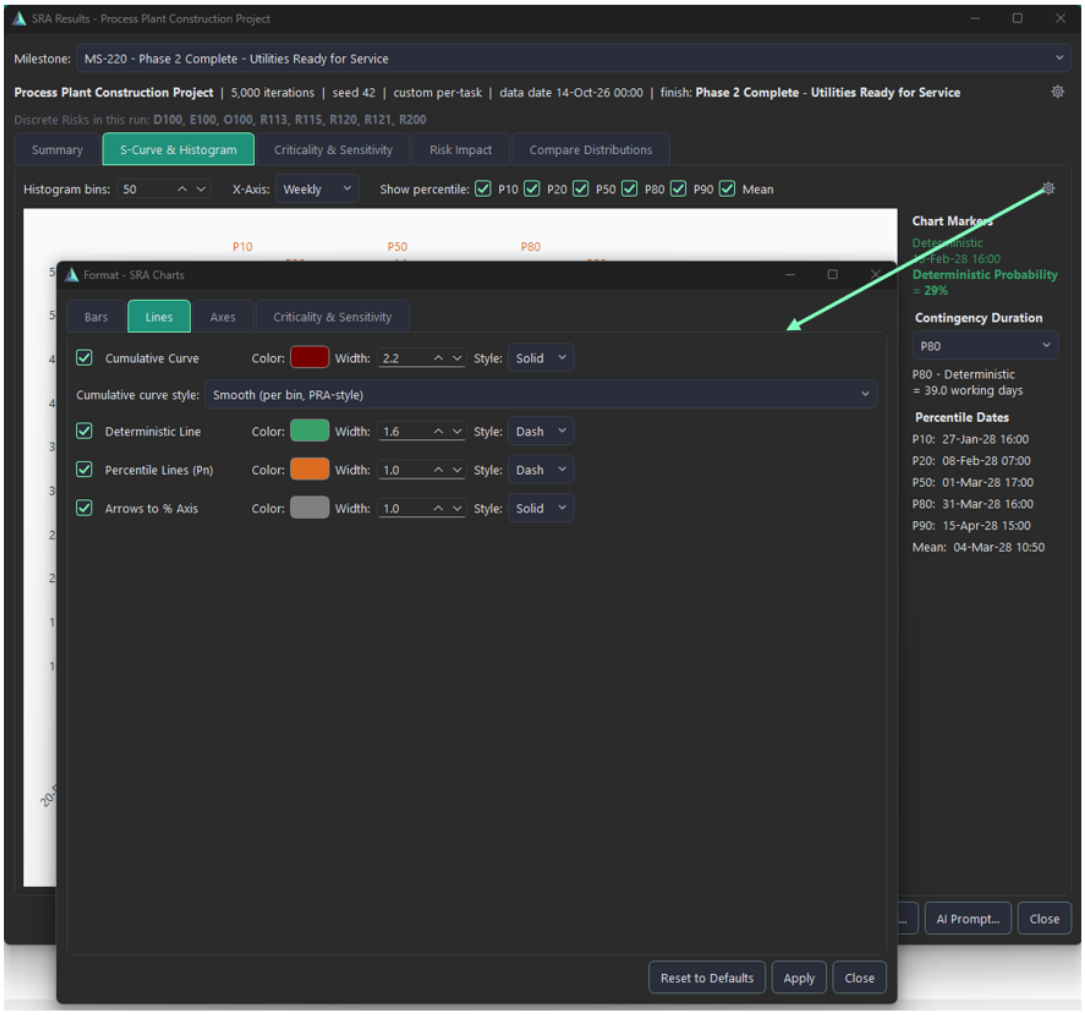


Figure 35 - Format SRA Charts

Click the **gear icon** at the right of the chart toolbar to open **Format - SRA Charts**. Changes are applied to the SRA Results charts.

The dialog has four tabs:

- **Bars**: Format the histogram bars.
- **Lines**: Format the S-curve and marker lines.
- **Axes**: Format the chart axes.
- **Criticality & Sensitivity**: Format the charts on the Criticality & Sensitivity tab.

Lines tab

Each line can be shown or hidden with its tick box, and formatted with its own **Color**, **Width** and **Style** (e.g. Solid or Dash):

Line	Default	Purpose
Cumulative Curve	Dark red, solid	The S-curve showing the cumulative probability of finishing by each date
Deterministic Line	Green, dashed	The deterministic (planned) finish date
Percentile Lines (Pn)	Orange, dashed	The P10, P20, P50, P80, P90 and Mean marker lines
Arrows to % Axis	Grey, solid	The arrows linking the S-curve to the percentage axis

Cumulative curve style sets how the S-curve is drawn, e.g. *Smooth (per bin, PRA-style)*.

Buttons

- **Apply**: Apply the changes to the charts.
- **Reset to Defaults**: Restore the default formatting.
- **Close**: Close the dialog.

Understanding the S-Curve and Histogram

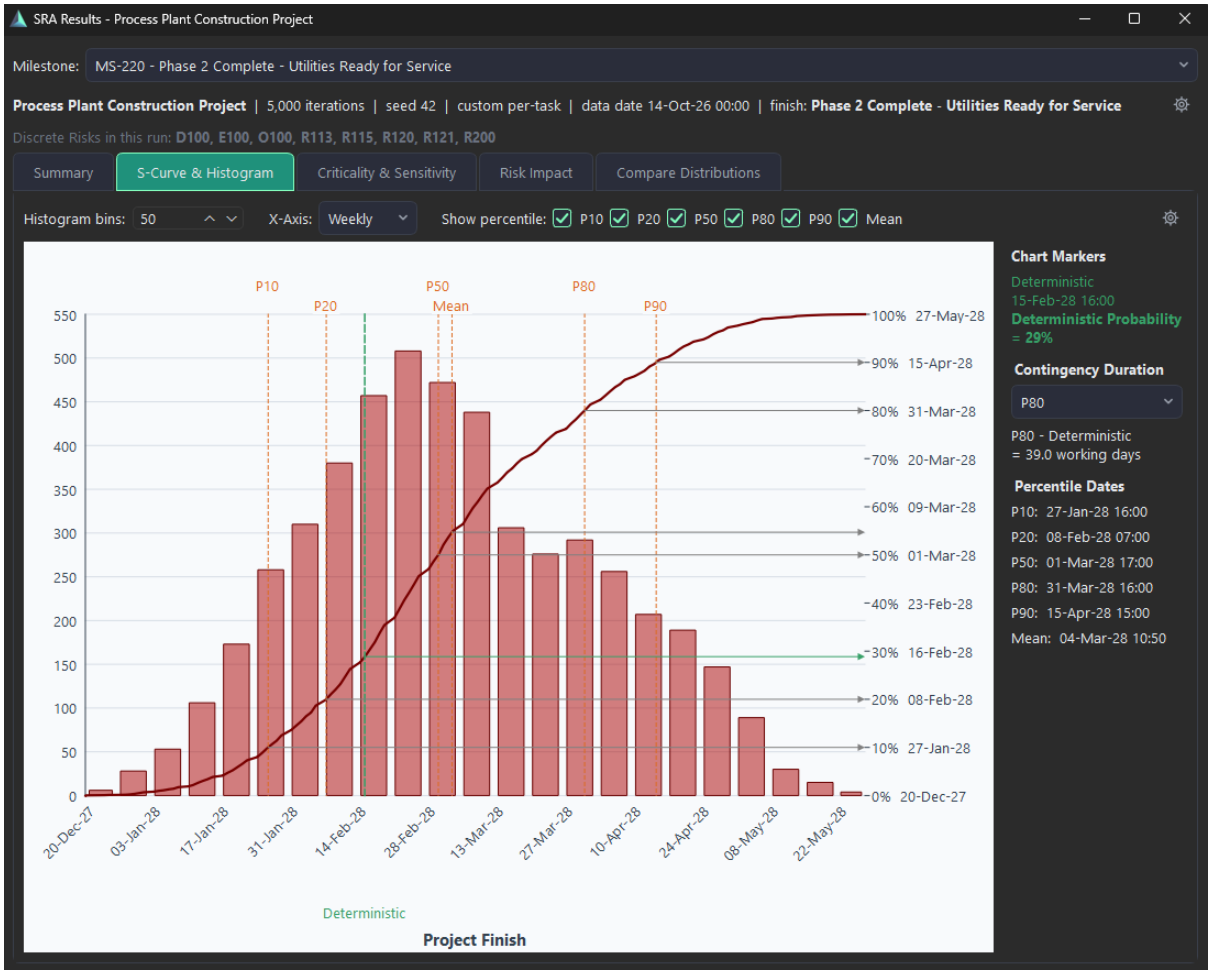


Figure 36 - S-Curve and Histogram

The chart combines two complementary views of the simulation results:

- **Histogram (Bars):** Shows how frequently simulated finish dates occur within each date interval. Taller bars indicate more simulation outcomes within that period.
- **Cumulative Probability Curve (Red Line):** Shows the probability of completing the milestone on or before a particular date.

The **green vertical line** indicates the deterministic finish date, allowing users to compare the original schedule forecast against the simulated outcomes.

Note: Percentile dates are calculated from the simulation results. Changing the histogram display frequency or the visible percentile lines does not change the underlying risk analysis.

Understanding Criticality and Sensitivity

The **Criticality & Sensitivity** tab helps identify activities that are most likely to become critical and those whose duration variations have the greatest influence on the selected milestone or project finish date.

This analysis helps users focus on activities that contribute most to schedule risk, rather than relying only on the deterministic critical path.

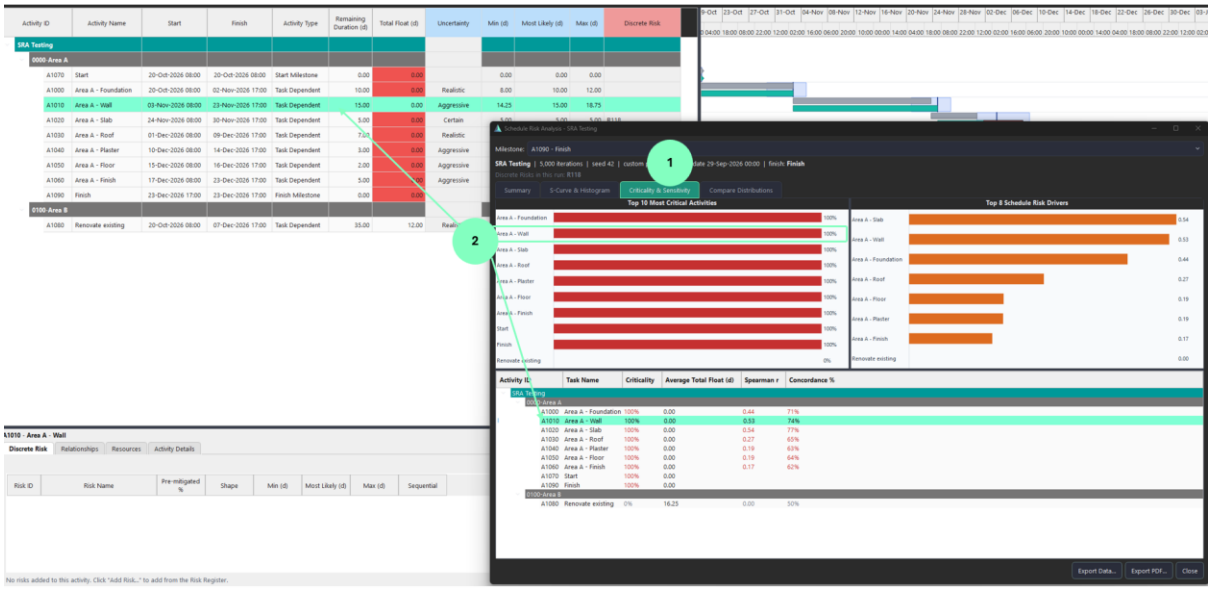


Figure 37 - SRA Criticality and Sensitivity Analysis

① Open Criticality & Sensitivity

Click the **Criticality & Sensitivity** tab in the SRA Results window.

The tab displays:

- **Top Most Critical Activities** - Ranks activities by their Criticality Index, representing the percentage of simulation iterations in which an activity was critical.
- **Top Schedule Risk Drivers** - Ranks activities by their sensitivity to the selected finish date, using Spearman rank correlation. What is measured is set by **Activity sensitivity** in Simulation Settings.
- **Detailed Activity Table** - Displays Criticality, Average Total Float, Spearman correlation and Concordance percentage for each activity in WBS view.

Understanding the Key Metrics

- **Criticality (%)** - The percentage of simulation iterations in which an activity is on a critical path. For example, 80% means the activity was critical in 80% of iterations.

- **Average Total Float** - The average total float calculated across the simulation iterations.
- **Spearman r** - Measures the strength and direction of the relationship between an activity's simulated duration and the selected milestone's finish date. Higher positive values indicate stronger associations with later finish dates.
- **Concordance (%)** - Indicates how consistently changes in an activity's duration and the milestone finish date move in the same direction.

Note: An activity can have high criticality but relatively low sensitivity. Criticality indicates how frequently an activity is critical, while sensitivity indicates how strongly its duration variations are associated with changes in the finish date.

② **Locate Activities in Schedule View**

Click an activity bar in the **Criticality or Sensitivity chart** to locate that activity.

Schedule Prism automatically:

1. Highlights the selected activity in the detailed activity table below the charts.
2. Locates and highlights the same activity in the main SRA Schedule View.

This is useful for large schedules, allowing users to quickly identify where critical and sensitive activities are located within the WBS structure.

Refining the Risk Analysis

After identifying the key schedule risk drivers, users can return to the main **SRA Schedule View** to review and modify:

- Activity duration uncertainty ranges.
- Assigned discrete risks and their duration impacts.
- Risk occurrence and correlation settings.

Click **Run Analysis** again to evaluate how these changes affect the simulation results.

This allows users to progressively refine their risk model and assess the impact of different risk assumptions or mitigation scenarios.

Understanding Risk Impact

The **Risk Impact** tab shows how much each discrete risk, opportunity and the overall duration uncertainty contributes to the selected milestone or project finish date. It answers the question: *"How much earlier would we finish if this item were removed?"*

This helps users rank risks by their actual effect on the finish date and focus mitigation where it delivers the greatest schedule benefit.

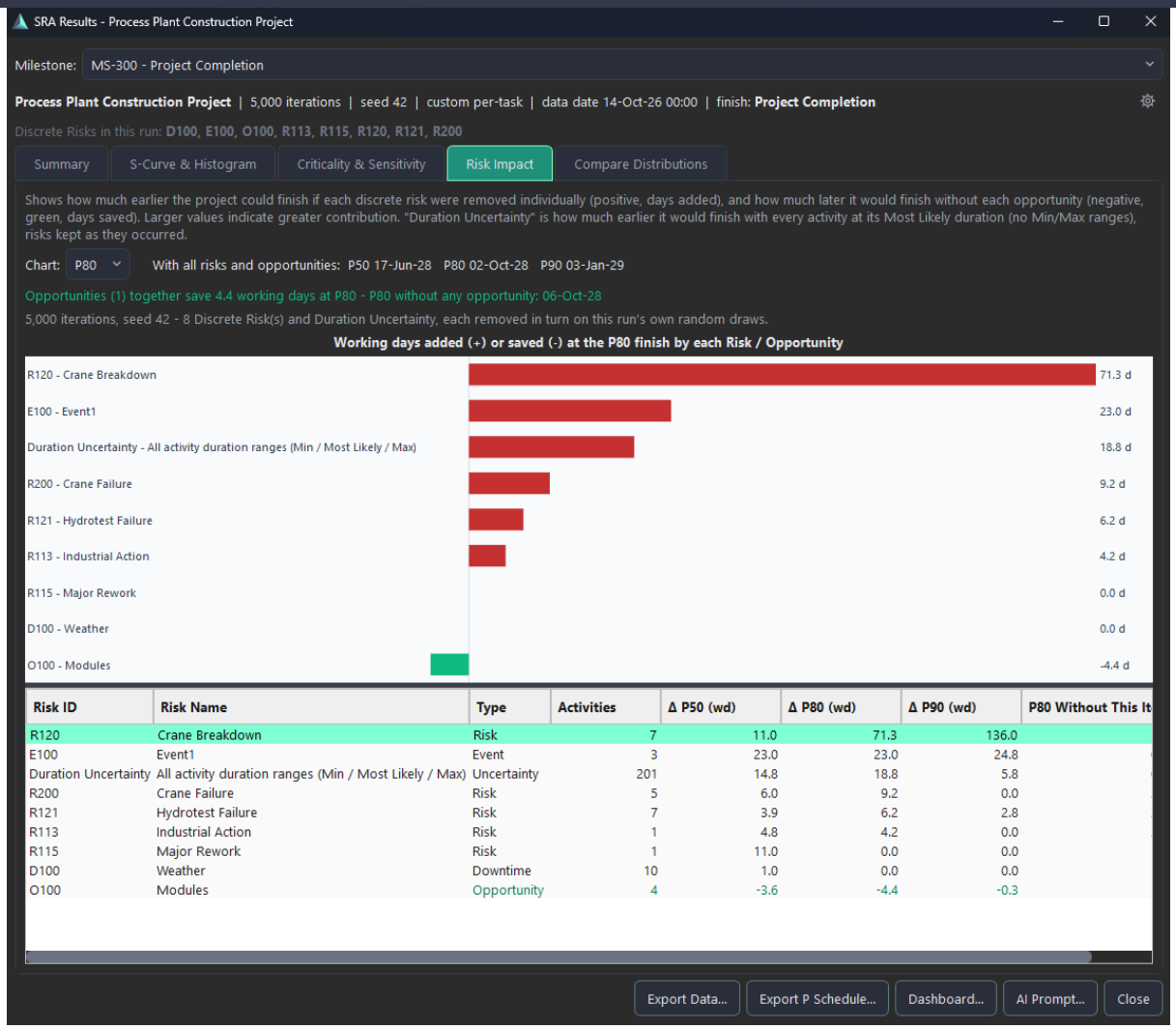


Figure 38- SRA Risk Impact Analysis

① Open Risk Impact

Click the **Risk Impact** tab in the SRA Results window. The header of the window lists the discrete risks included in the run (e.g. D100, E100, O100, R113, R115, R120, R121, R200).

The tab displays:

- **Chart** selector: Choose the confidence level to chart (e.g. P50, P80 or P90).
- **With all risks and opportunities**: The baseline P50, P80 and P90 finish dates, with every item included.
- **Opportunities summary**: The combined working days saved by all opportunities at the selected percentile, and the finish date if no opportunities were realised.
- **Impact chart**: Working days added (red, positive) or saved (green, negative) at the selected percentile by each item, sorted from largest to smallest impact.

- **Detailed table**: The impact of each item at P50, P80 and P90.

② How Risk Impact Is Calculated

Each item is removed **one at a time**, and the simulation is re-evaluated using the **same random draws** (same iterations and seed) as the original run. This means the differences are caused by the removed item alone, not by random sampling variation.

- **Risks, Events and Downtime**: The value shows how much **earlier** the finish would be without the item (positive, working days added by the item).
- **Opportunities**: The value shows how much **later** the finish would be without the opportunity (negative, working days saved by the opportunity).
- **Duration Uncertainty**: The value shows how much earlier the finish would be if every activity ran at its Most Likely duration (no Min / Max ranges), while discrete risks still occur as they did in each iteration.

All values are in working days by default (see SRA Report Settings).

③ Understanding the Table Columns

- **Risk ID / Risk Name / Type**: The item and its type (Risk, Event, Downtime, Opportunity or Uncertainty).
- **Activities**: The number of activities the item is assigned to.
- **Δ P50 / Δ P80 / Δ P90 (wd)**: The working days added or saved by the item at each percentile.
- **P80 Without This Item**: The P80 finish date if this item were removed.

④ Interpreting the Results

Comparing the impact across percentiles shows *how* each item affects the schedule:

Pattern	Meaning	Example
Impact grows towards P90	A low-probability, high-impact item that mainly drives the pessimistic tail	R120 Crane Breakdown: 11.0 d at P50, 71.3 d at P80, 136.0 d at P90
Similar impact at all percentiles	A likely item that shifts the whole distribution	E100 Event1: 23.0 / 23.0 / 24.8 d
Impact at P50 only	An item that affects typical outcomes, but whose effect is absorbed or	R115 Major Rework: 11.0 d at P50, 0.0 d at P80

	overtaken by other risks at higher percentiles	
Near zero at all percentiles	The item rarely affects the finish date, e.g. it sits on paths with enough float	D100 Weather: 1.0 / 0.0 / 0.0 d
Negative	An opportunity that saves time	O100 Modules: −3.6 / −4.4 / −0.3 d

Note: Impacts are **not additive**. Each item is removed on its own, so removing two risks together will usually not save exactly the sum of their individual values. When one risk is removed, another risk or path may become the driver of the finish date.

Note: Risk Impact and Criticality & Sensitivity answer different questions. Criticality & Sensitivity shows *which activities* drive the finish date. Risk Impact shows *which risks* add the most time to it. Use both together to target mitigation.

⑤ **Using the Results**

- Prioritise mitigation for the items with the largest impact at the confidence level your project commits to (often P80).
- Review high-impact items in the **Risk Register** or **Risk Assignment**, and check their probability, impact range and assigned activities.
- Model mitigation by entering a **Post-Mitigated %** or reducing the impact range, then select post-mitigated risks in **Simulation Settings** and click **Run Analysis** again to compare the results.

Compare Distributions

The **Compare Distributions** tab allows users to compare results from multiple SRA simulations on a single chart, using either cumulative probability (S-Curve) or histogram distributions.

This is particularly useful for evaluating different risk scenarios, such as **pre-mitigation versus post-mitigation**, and understanding how changes in duration uncertainty or discrete risks affect the probability of achieving a milestone.

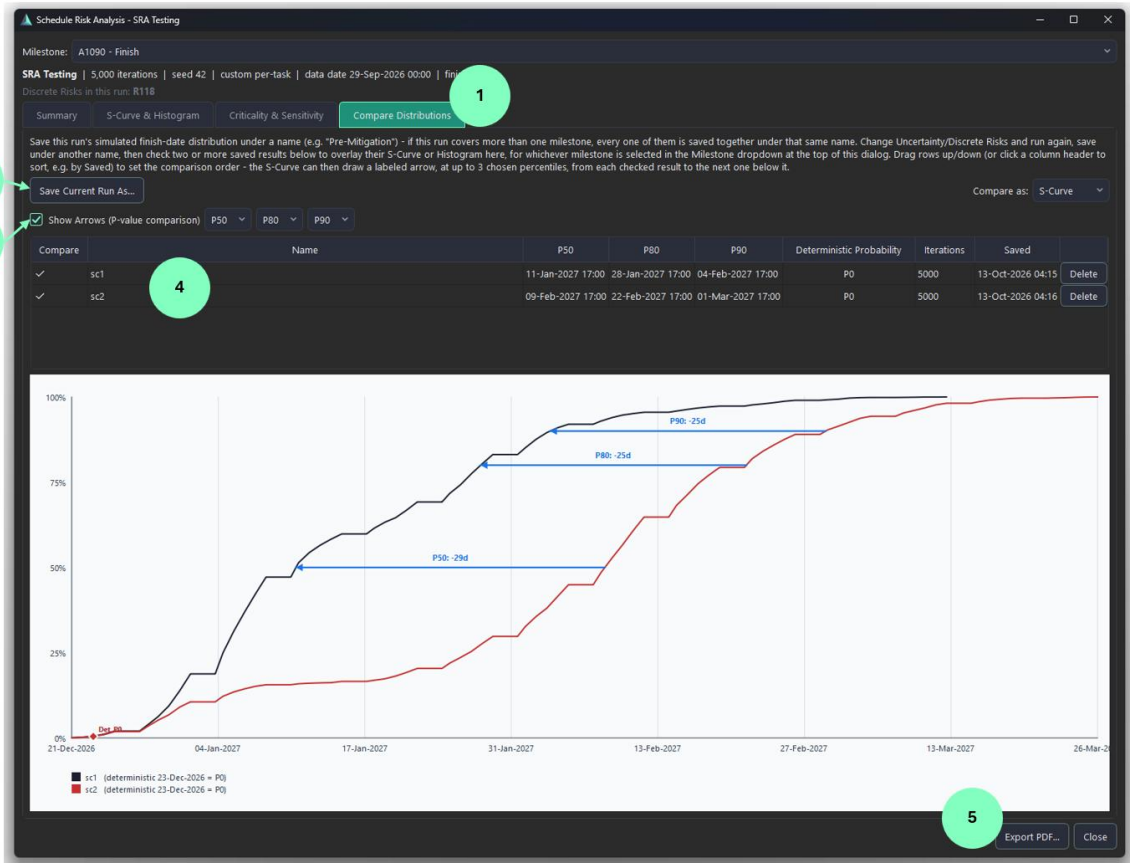


Figure 39 - Comparing SRA Simulation Results

① Open Compare Distributions

Click the **Compare Distributions** tab in the SRA Results window.

② Save Simulation Results

Click **Save Current Run As** to save the current simulation results under a scenario name (e.g., *Pre-Mitigation*).

- The saved scenario appears in the comparison table.
- Modify the duration uncertainty or risk assumptions, run the simulation again, and save the new results under another name (e.g., *Post-Mitigation*).
- Multiple saved scenarios can be compared on the same chart.

③ Show Percentile Movement

Tick **Show Arrows (p-value comparison)** to display the movement between selected percentile dates.

- Select up to three percentile values (e.g., P50, P80 and P90).
- Arrows indicate the difference in finish dates between the compared scenarios.
- This helps quantify the improvement or deterioration in the forecast finish date.

For example, a **P80 movement of -25 days** indicates that the compared scenario achieves its P80 finish date 25 days earlier.

④ **Manage and Compare Saved Scenarios**

The comparison table displays the saved scenarios and their key results, including P50, P80, P90, deterministic probability and simulation iterations.

- **Compare** - Tick or untick scenarios to include or exclude them from the chart.
- **Reorder** - Drag rows up or down to change their display order, or click a column header to sort.
- **Delete** - Click **Delete** to remove a saved scenario.
- **Compare as** - Switch between **S-Curve** and **Histogram** to compare cumulative probability distributions or finish-date frequency distributions.

⑤ **Export Comparison Report**

Click **Export PDF** to generate a PDF report showing the scenario comparison chart.

Note: If the simulation includes multiple milestones, saving a run stores the results for all analysed milestones under the same scenario name. Use the **Milestone** drop-down at the top of the SRA Results window to compare results for a particular milestone.

Practical Application

The comparison feature is especially useful for assessing risk mitigation effectiveness.

For example, run an initial simulation using pre-mitigation risk probabilities and save it as *Pre-Mitigation*. Then update the risk assumptions, run the simulation again and save it as *Post-Mitigation*.

Comparing the two distributions shows how the proposed mitigation measures change the forecast completion dates and associated confidence levels.

SRA Dashboard - Building a Custom Risk Dashboard

The **SRA Dashboard** lets you build your own risk report from a library of visuals: key metrics, charts and tables. You can format, resize and rearrange the visuals, save the arrangement as a reusable layout, and export the result to PDF for reporting.

To open it, click **Dashboard** at the bottom of the **SRA Results** window (⑧). It is available after a simulation has been run.

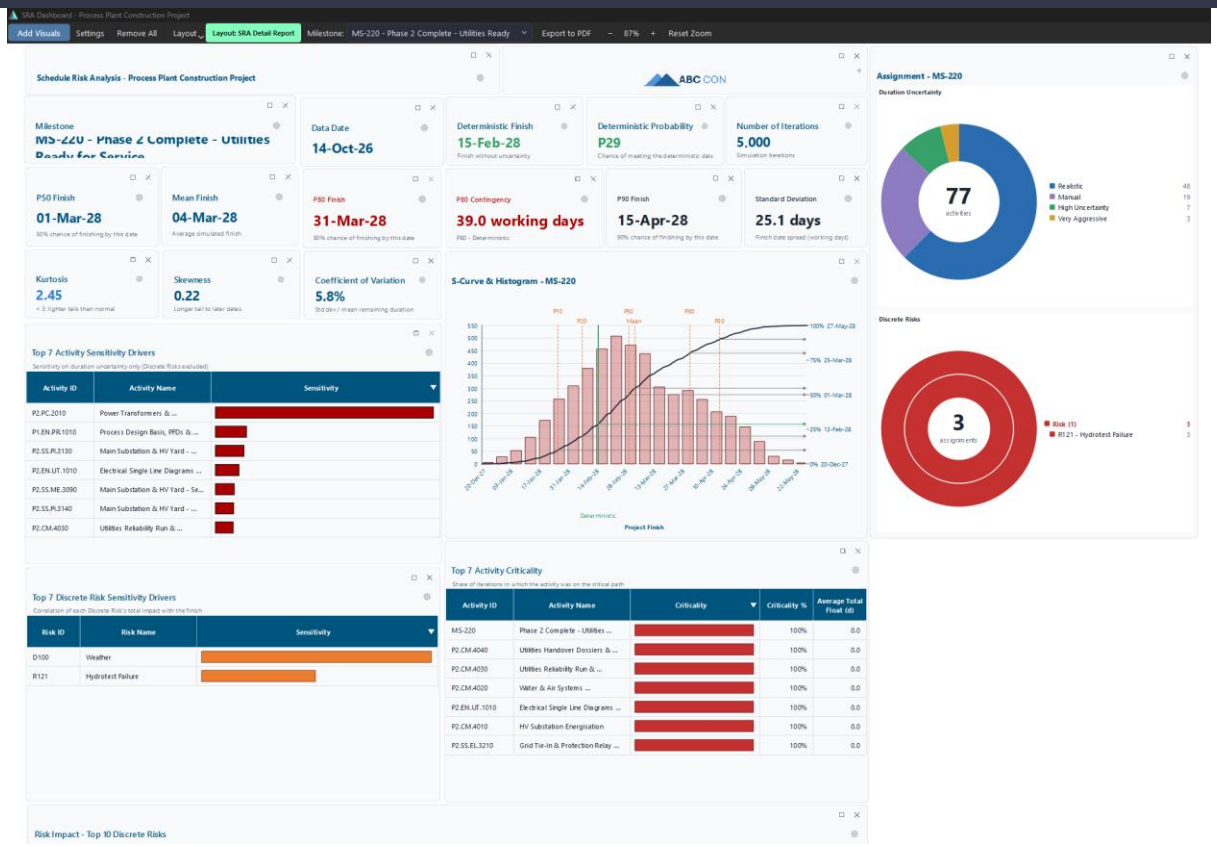


Figure 40 - SRA Custom Dashboard (a layout)

① Dashboard Toolbar

Control	Purpose
Add Visuals	Open the visual library and add visuals to the dashboard
Settings	Set dashboard-wide options
Remove All	Clear all visuals from the dashboard
Layout	Save the current arrangement as a layout, or load a saved layout
Layout: *name*	Shows the layout currently in use (e.g. *SRA Detail Report*)
Milestone	Select the milestone to report on. All visuals update to show results for that milestone.
Export to PDF	Export the dashboard as a PDF report
- / % / + and **Reset Zoom**	Zoom the dashboard out or in, or return to the default zoom

② Adding, Arranging and Formatting Visuals

- **Add**: Click **Add Visuals** and select the visuals you need.

- **Rearrange**: Drag a visual to a new position on the dashboard.
- **Resize**: Drag a visual's edges or corners to change its size.
- **Format**: Click the **gear icon** on a visual to change its settings, such as the title, the number of items shown (e.g. Top 7 or Top 10) and its display options.
- **Maximise / Close**: Use the buttons in the top-right corner of a visual to expand it or remove it from the dashboard.
- **Title and logo**: Add a report title and a company or project logo to brand the report.

③ Available Visuals

Key metrics (tiles)

Visual	What it shows
Milestone / Data Date	The milestone being reported and the schedule data date
Number of Iterations	The number of Monte Carlo iterations in the run
Deterministic Finish	The finish date without any uncertainty or risks
Deterministic Probability	The chance of meeting the deterministic date (e.g. P29 means only 29% of iterations finished on or before it)
P50 / P80 / P90 Finish	The dates with a 50%, 80% or 90% chance of finishing by that date
Mean Finish	The average simulated finish date
P80 Contingency	The P80 finish minus the deterministic finish, in working days by default (see SRA Report Settings). This is the schedule contingency needed for 80% confidence.
Standard Deviation	The spread of the simulated finish dates (working days by default)
Skewness	The asymmetry of the distribution. A positive value means a longer tail towards later dates.
Kurtosis	The weight of the tails. Below 3 means lighter tails than a normal distribution; above 3 means more extreme outcomes.

Coefficient of Variation	Standard deviation ÷ mean remaining duration. This compares relative uncertainty between milestones or projects.

Charts and tables

Visual	What it shows
S-Curve & Histogram	The distribution of finish dates, with markers for P10, P20, P50, Mean, P80, P90 and the deterministic date
Top N Activity Sensitivity Drivers	The activities whose duration uncertainty most influences the finish date (discrete risks excluded)
Top N Discrete Risk Sensitivity Drivers	The correlation of each discrete risk's total impact with the finish date
Top N Activity Criticality	The activities most often on the critical path, with Criticality % and Average Total Float
Risk Impact - Top N Discrete Risks	The working days added or saved by each risk (see Understanding Risk Impact)
Assignment	Donut charts of the activities by Uncertainty Type (e.g. Realistic, Manual, High Uncertainty) and of the discrete risk assignments for the selected milestone

④ Saving and Reusing Layouts

Use **Layout** to save the current dashboard arrangement, including the visuals, their positions, sizes and formatting, under a name (e.g. *SRA Detail Report* or *Executive Summary*). Saved layouts can be loaded for any project or milestone, so reports stay consistent across updates and projects.

⑤ Exporting the Dashboard

Select the required **Milestone**, then click **Export to PDF** to produce a report of the dashboard as displayed. To report on several milestones, switch the milestone and export again. All visuals update automatically.

Tip: Create separate layouts for different audiences, such as a one-page executive summary with the key P-dates and contingency, and a detailed report with the drivers, criticality and risk impact tables for the project controls team.

Risk Plans

A **Risk Plan** saves the complete Schedule Risk Analysis in a single file, allowing users to reopen an analysis, reuse risk assumptions on an updated schedule, or share the analysis with other Schedule Prism users.

Risk Plan files use the **.sprisk** extension.

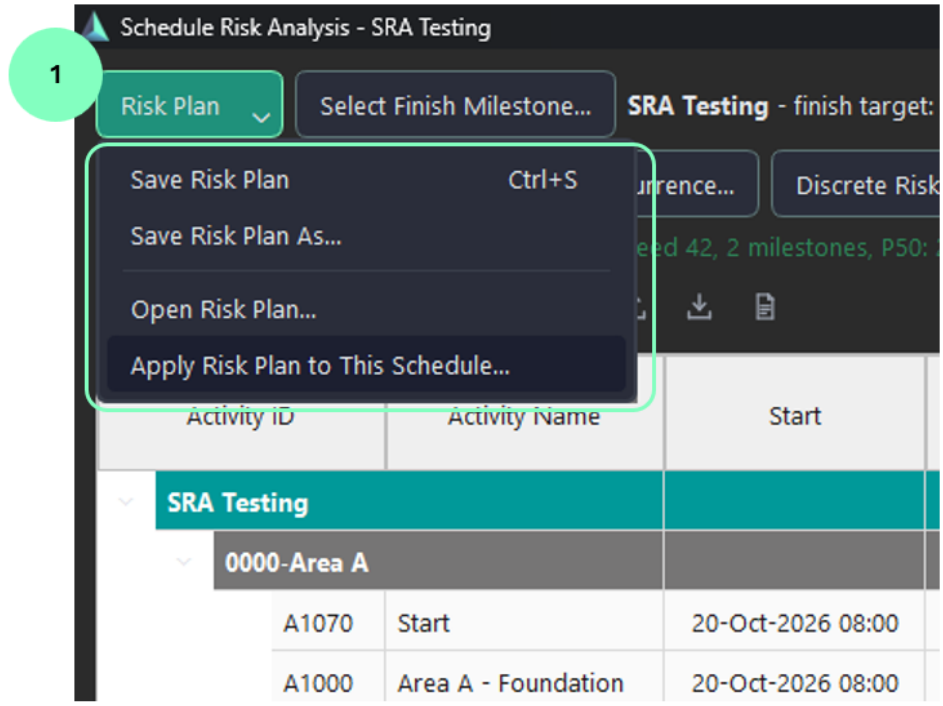


Figure 41 - Manage Risk Plans

① Save and Manage Risk Plans

Click **Risk Plan** at the top-left of the Schedule Risk Analysis window to access the following options:

- **Save Risk Plan (Ctrl+S)** - Save the current analysis, including schedule data, risk inputs, simulation settings and results.
- **Save Risk Plan As** - Save a separate copy under a new file name.
- **Open Risk Plan** - Open a previously saved Risk Plan, including its original schedule and analysis results.
- **Apply Risk Plan to This Schedule** - Transfer risk assumptions from an existing Risk Plan to the currently loaded schedule.

What is saved in a Risk Plan?

- Schedule data, including activities, relationships, calendars, WBS, Activity Codes and resource assignments.
- Selected finish milestones and activities.
- Duration uncertainty and probability of occurrence assignments.
- Discrete Risk Register and activity risk assignments.

- Simulation settings.
- Latest simulation results, including the dashboard and P10-P90 ranges.
- Saved scenario results used in Compare Distributions.

Risk Plans are saved manually. Unsaved changes are indicated by an asterisk (*) in the window title.

② Open an Existing Risk Plan

A saved Risk Plan can be opened directly from the Schedule Prism workspace.

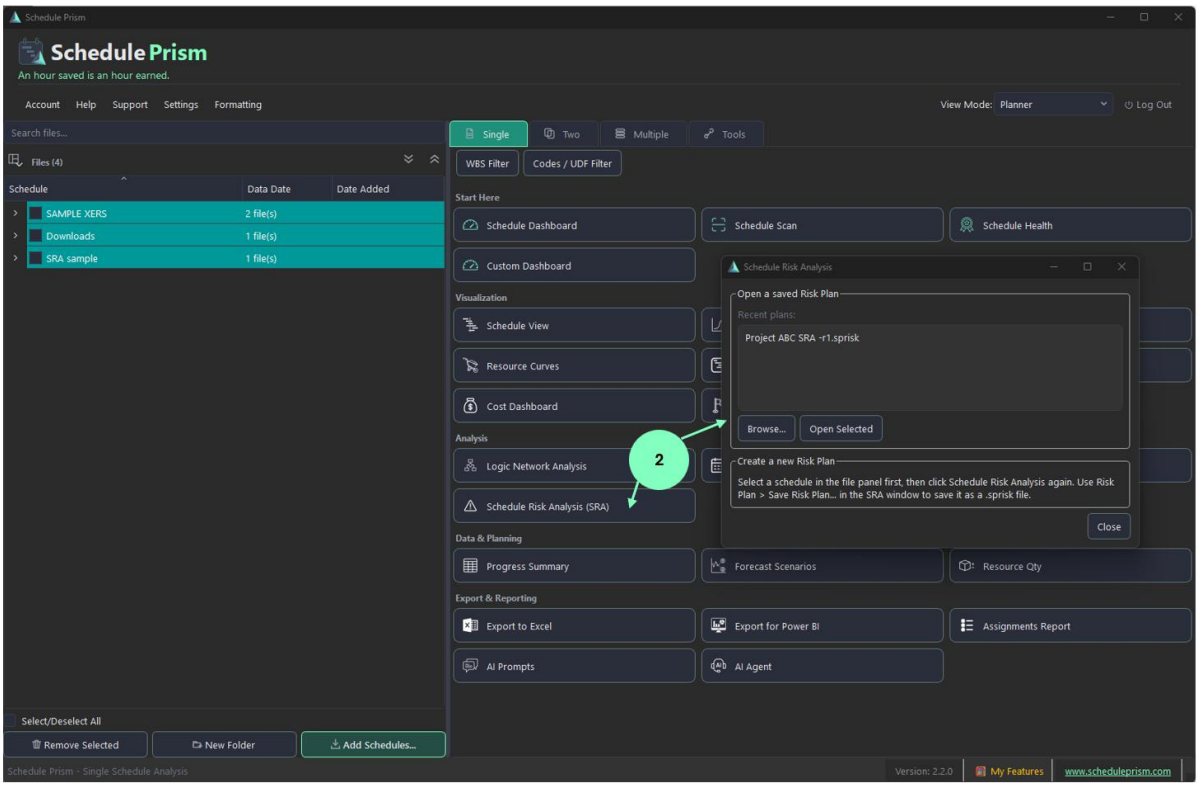


Figure 42 - Open an Existing Risk Plan

You do not need to select or load a schedule before opening an existing Risk Plan. The Risk Plan already contains the schedule data required for the analysis.

1. From the Schedule Prism workspace, click **Schedule Risk Analysis (SRA)** under Single Schedule Analysis, without selecting a schedule.
2. The **Open a Saved Risk Plan** dialog appears.
3. Select a previously saved plan from **Recent Plans**, or click **Browse** to locate a .sprisk file.
4. Click **Open Selected** to open the Risk Plan.

The saved schedule, risk assignments, simulation settings and available results are restored automatically.

If the Risk Plan contains completed simulation results, the SRA Results window can be opened without running the simulation again.

Apply a Risk Plan to an Updated Schedule

To reuse risk assumptions on a new schedule update:

1. Select and open the updated schedule in Schedule Risk Analysis.
2. Click **Risk Plan → Apply Risk Plan to This Schedule**.
3. Browse and select the previously saved Risk Plan.
4. Schedule Prism matches activities using their **Activity IDs** and transfers the applicable risk inputs.

Activities no longer present in the updated schedule are skipped. New activities retain their default uncertainty settings.

Important: Duration uncertainty values are transferred as saved. If remaining durations have changed, review the Min, Most Likely and Max values or reapply the uncertainty categories to recalculate them.

Sharing Risk Plans

Risk Plans can be shared with other Schedule Prism users by sending the **.sprisk** file.

The recipient can open the complete analysis without requiring the original XER, XML or MPP schedule file.