# Risk of Events From Threats with Controls

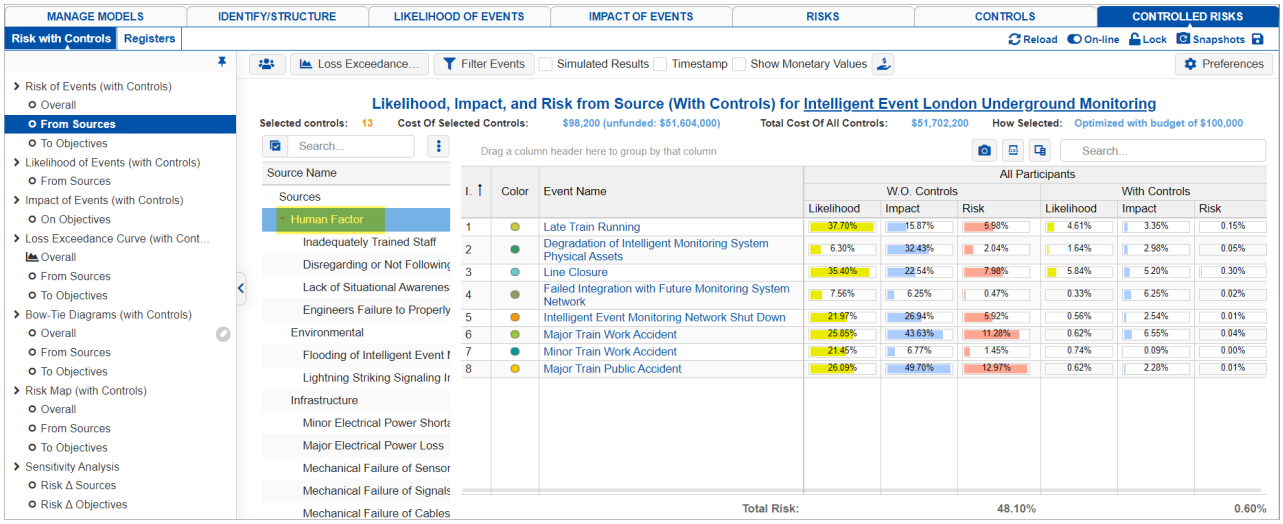
## Overview

This page displays a similar grid as with the Risk of Events From Threats (without controls), but with added columns for results when Controls are in effect.

In Riskion, we refer to **threats**, **causes**, **hazards**, and **sources** interchangeably. While they may have slightly different nuances depending on the context in which they are used, they serve the same purpose -- they are all threats/sources of risk (for Risk Events) or sources of opportunity (for Opportunity Events).

In our sample model, we are using the terminology "Source(s)".

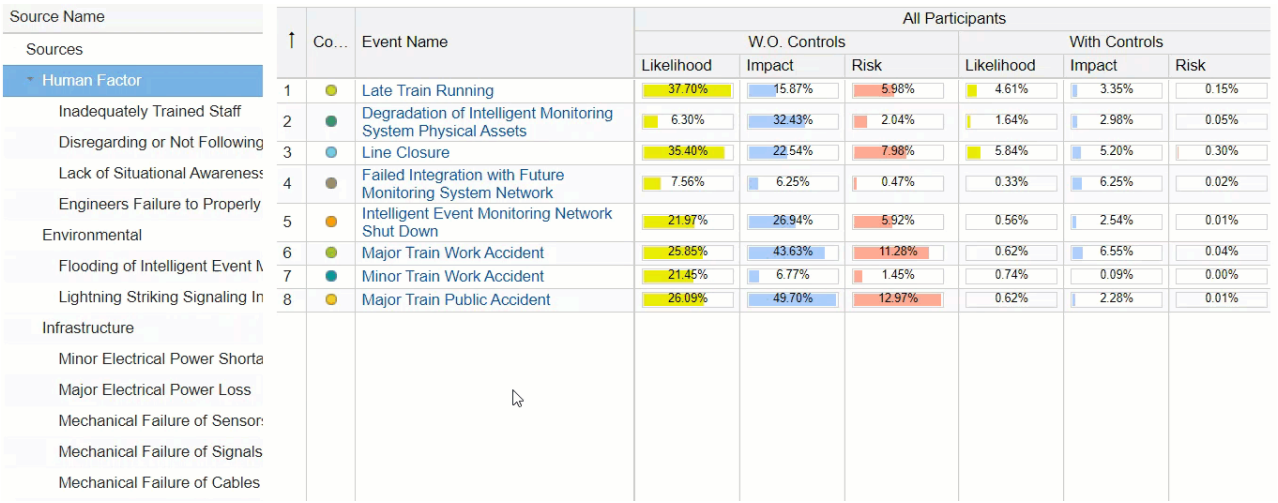
The Likelihoods, Impacts, and Risks of the events from Source "**Human Factor**" **without** and with **controls** are displayed below:




The combined results for "**All Participants**" are displayed by default. The W.O. (without ) Controls and With Controls are displayed below the "All Participants" column heading.

| I. | Color | Event Name | All Participants | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | W.O. Controls | | | With Controls | | |
| | | | Likelihood | Impact | Risk | Likelihood | Impact | Risk |
| 1 | | Late Train Running | 37.70% | 15.87% | 5.98% | 4.61% | 3.35% | 0.15% |
| 2 | | Degradation of Intelligent Monitoring System Physical Assets | 6.30% | 32.43% | 2.04% | 1.64% | 2.98% | 0.05% |
| 3 | | Line Closure | 35.40% | 22.54% | 7.98% | 5.84% | 5.20% | 0.30% |
| 4 | | Failed Integration with Future Monitoring System Network | 7.56% | 6.25% | 0.47% | 0.33% | 6.25% | 0.02% |
| 5 | | Intelligent Event Monitoring Network Shut Down | 21.97% | 26.94% | 5.92% | 0.56% | 2.54% | 0.01% |
| 6 | | Major Train Work Accident | 25.85% | 43.63% | 11.28% | 0.62% | 6.55% | 0.04% |
| 7 | | Minor Train Work Accident | 21.45% | 6.77% | 1.45% | 0.74% | 0.09% | 0.00% |
| 8 | | Major Train Public Accident | 26.09% | 49.70% | 12.97% | 0.62% | 2.28% | 0.01% |
| | | Total Risk: | | | 48.10% | | | 0.60% |

A Source is selected from the Sources Hierarchy at the left.



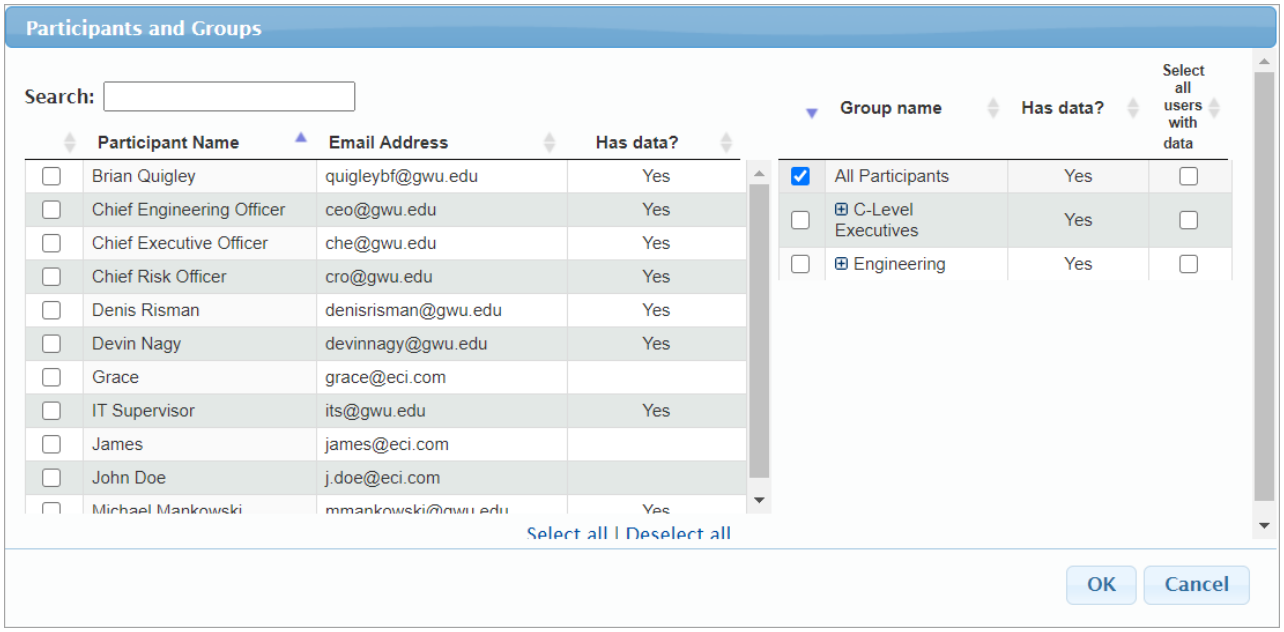

You can also select the top node "Sources" which will show the same results as with the Overall Risk Results page.

The Events on the grid may vary depending on the contributions of the events given the selected source.

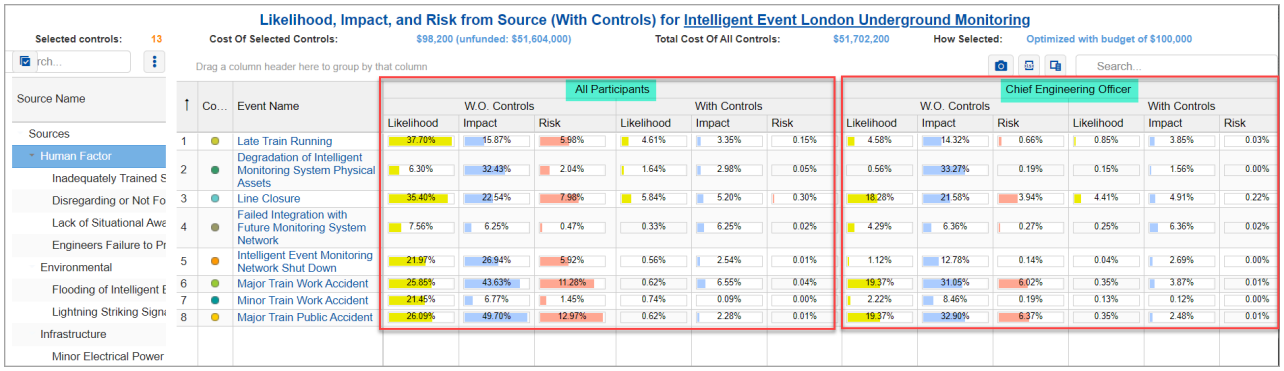
## Select Participants and Groups

By default, the results shown are for the "All Participants" group.

By selecting from the  "Participants and Groups" icon, you can display the results for other participants or groups



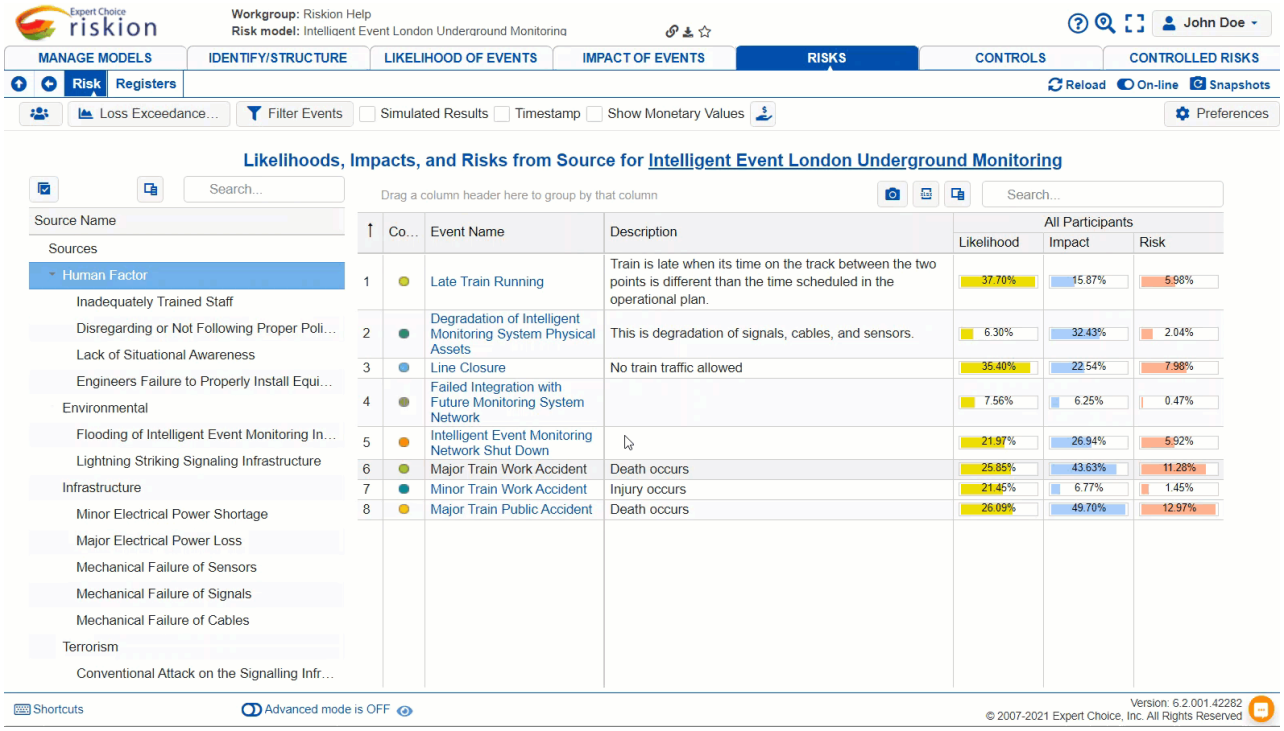

After selecting participants and groups to display, click OK.



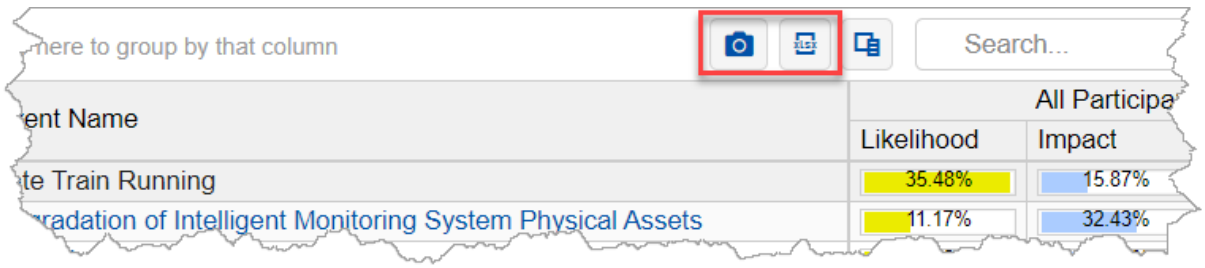

## Open Bow-tie diagram from Grid

Clicking the Event Name will open a modal that displays the bow-tie diagram for the selected event.

From the Bow-tie diagram, you analyze the **likelihoods** (left) and **impacts** (right) of the selected **event** (center) For **Threats** with **controls**. Click "Bow-tie Diagram From Threats" for more details.




## Export Grid into excel or image format




You can export the grid into a .xlsx file by clicking 

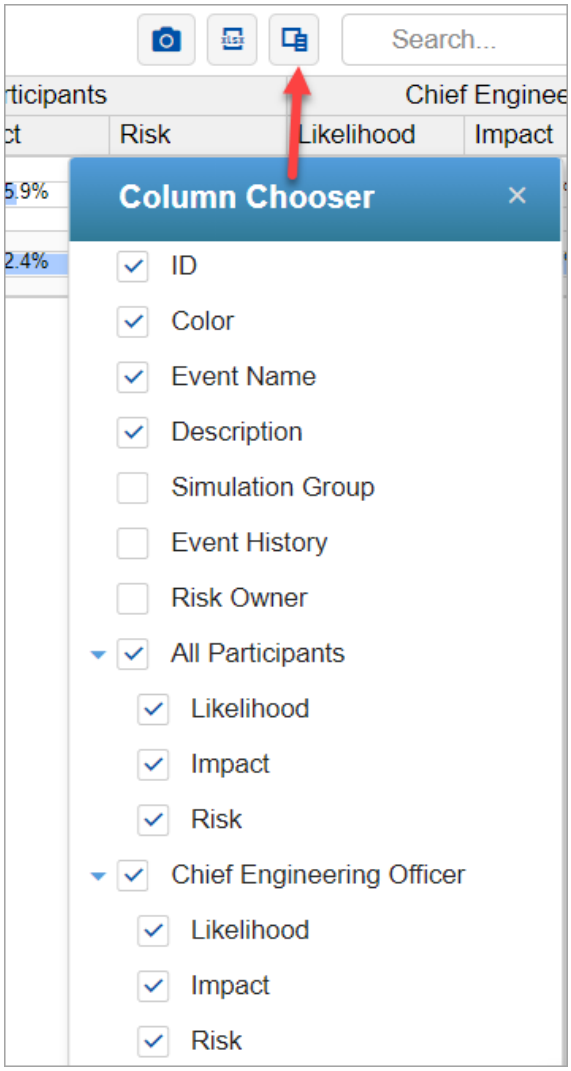
You can also export the results page into an image file (.png) by clicking 

## Show or Hide columns

You can show/hide columns both for:

- the main results grid at the right, and
- the hierarchy tree at the left

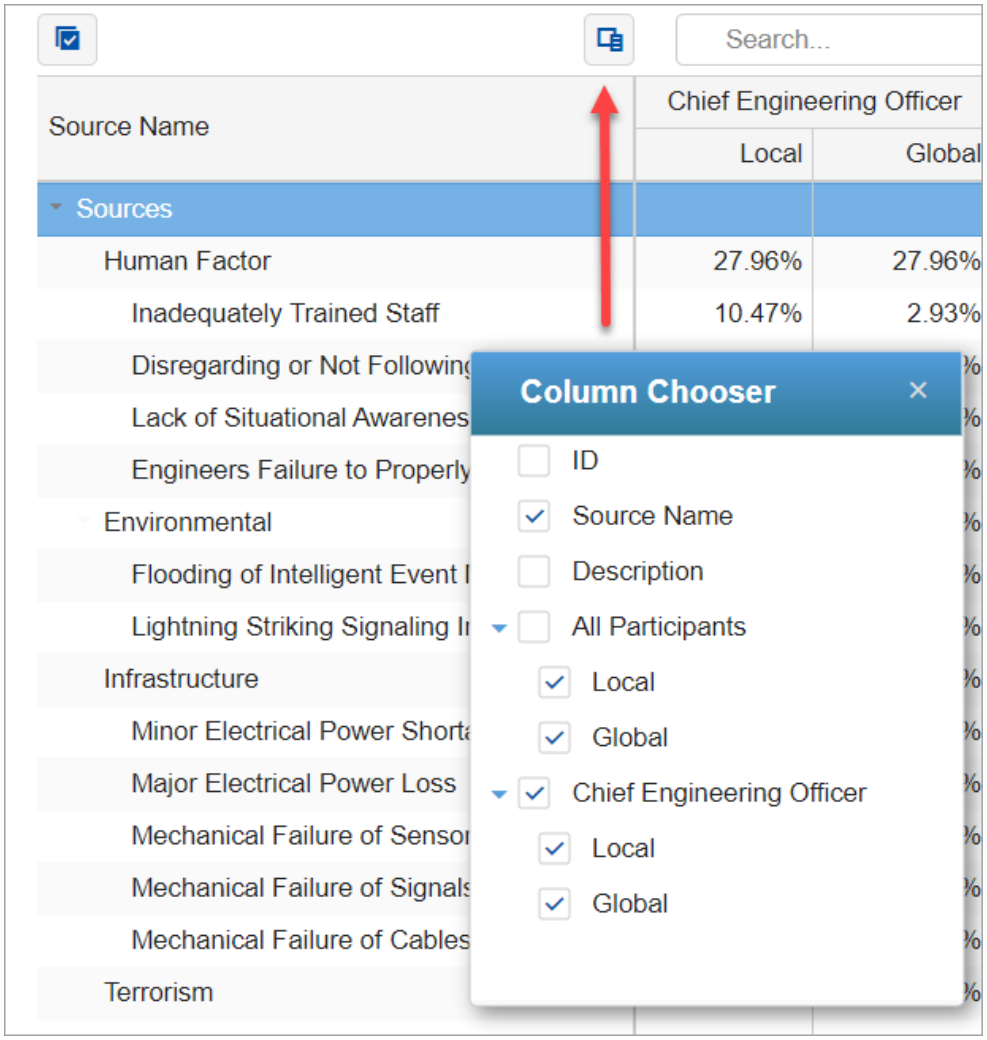
For the main results grid, click the column chooser at the top of the grid:




Simply check/uncheck the column(s) you want to show/hide.

The events attributes can also be displayed on the grid, from above the "Event History" and "Risk Owner" are events attributes.

For the Sources Hierarchy, click also the column choose on its top:




Here you can select:

- ID - Source ID
- Source Name
- Description - source's description or information document
- Local and Global - local or global likelihoods of the sources based on the selected participant/group judgments

## Sort by Column

Clicking the column header can sort the grid in ascending or descending order by that header.

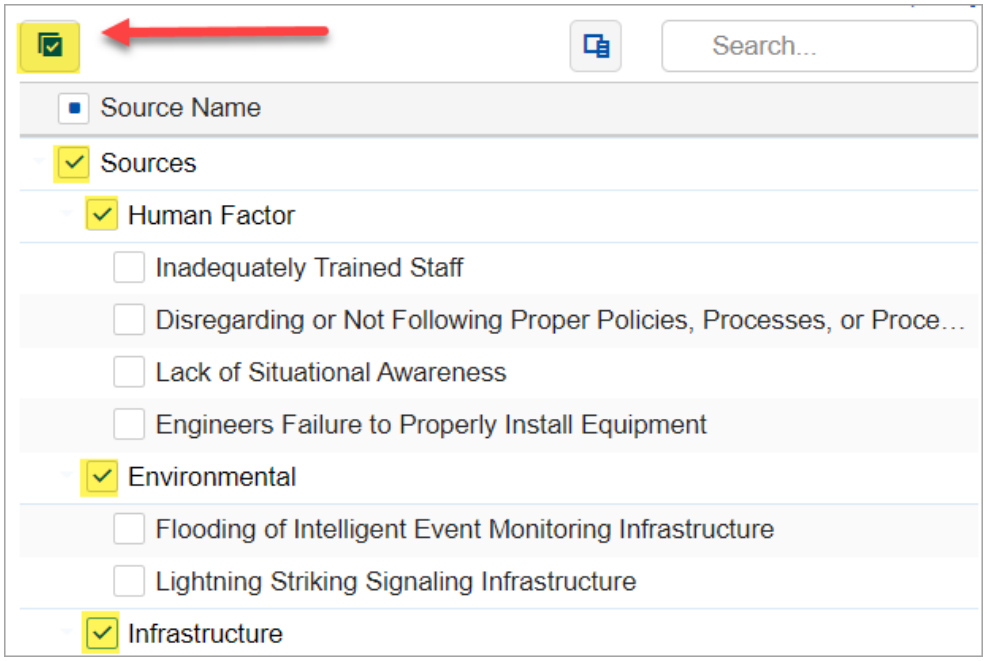
| ID | Color | Event Name | Description | All Participants | | |
|---|---|---|---|---|---|---|
| | | | | Likelihood | Impact | Risk |
| [01] | | Late Train Running | Train is late when its time on the track between the two points is different than the time scheduled in the operational plan. | 35.5% | 15.9% | 5.6% |
| [02] | | Degradation of Intelligent Monitoring System Physical Assets | This is degradation of signals, cables, and sensors. | 11.2% | 32.4% | 3.6% |
| [05] | | Line Closure | No train traffic allowed | 27.2% | 22.5% | 6.1% |
| [06] | | Failed Integration with Future Monitoring System Network | | 15.6% | 6.2% | 1.0% |
| [07] | | Intelligent Event Monitoring Network Shut Down | | 18.6% | 26.9% | 5.0% |
| [08] | | Major Train Work Accident | Death occurs | 17.6% | 43.6% | 7.7% |
| [09] | | Minor Train Work Accident | Injury occurs | 14.7% | 6.8% | 1.0% |
| [10] | | Major Train Public Accident | Death occurs | 17.7% | 49.7% | 8.8% |
| | | | Total Risk: | | | 38.8% |

You can reset the sorting by pressing the Ctrl key on your keyboard and clicking again the column header where the sorting is currently active.

## Select Multiple Source Nodes

Instead of showing results only from one WRT Source, you can also select multiple source nodes at once.

To enable multi-select, click the multi-select icon at the top of the Sources Hierarchy. By doing so, you will see checkboxes to the right of the source names where you can select the WRT source nodes you want to see the results.



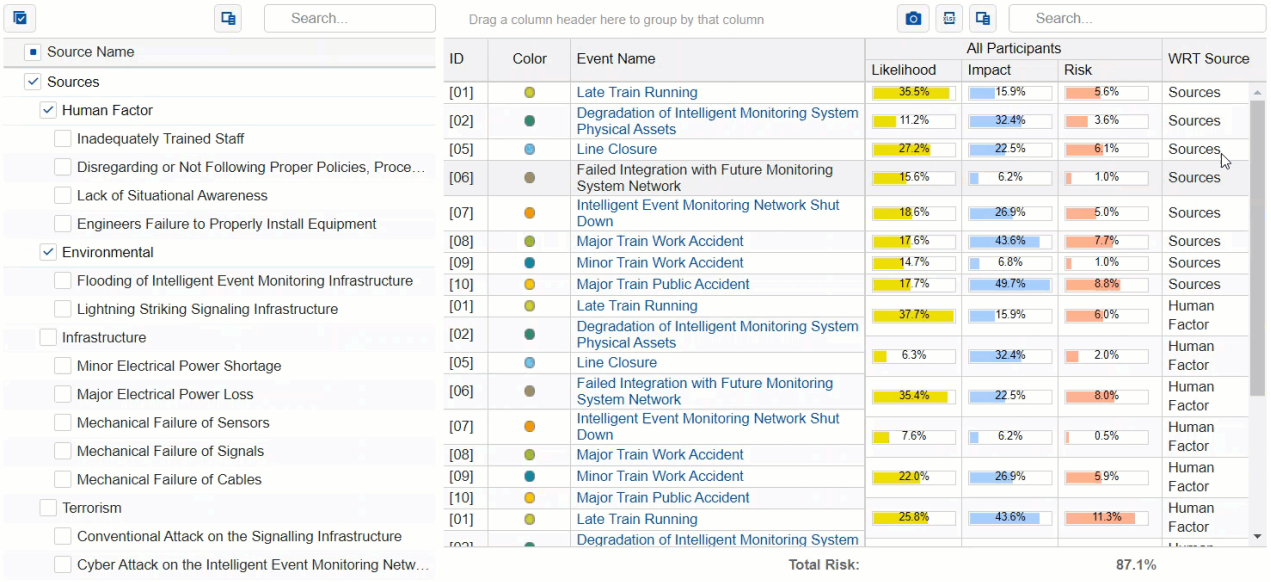

A new column, WRT Source, will be displayed on the main results grid to indicate the WRT nodes for each event.

| ID | Color | Event Name | All Participants | | | WRT Source |
|---|---|---|---|---|---|---|
| | | | Likelihood | Impact | Risk | |
| [01] | | Late Train Running | 35.5% | 15.9% | 5.6% | Sources |
| [02] | | Degradation of Intelligent Monitoring System Physical Assets | 11.2% | 32.4% | 3.6% | Sources |
| [05] | | Line Closure | 27.2% | 22.5% | 6.1% | Sources |
| [06] | | Failed Integration with Future Monitoring System Network | 15.6% | 6.2% | 1.0% | Sources |
| [07] | | Intelligent Event Monitoring Network Shut Down | 18.6% | 26.9% | 5.0% | Sources |
| [08] | | Major Train Work Accident | 17.6% | 43.6% | 7.7% | Sources |
| [09] | | Minor Train Work Accident | 14.7% | 6.8% | 1.0% | Sources |
| [10] | | Major Train Public Accident | 17.7% | 49.7% | 8.8% | Sources |
| [01] | | Late Train Running | 37.7% | 15.9% | 6.0% | Human Factor |
| [02] | | Degradation of Intelligent Monitoring System Physical Assets | 6.3% | 32.4% | 2.0% | Human Factor |
| [05] | | Line Closure | 35.4% | 22.5% | 8.0% | Human Factor |
| [06] | | Failed Integration with Future Monitoring System Network | 7.6% | 6.2% | 0.5% | Human Factor |
| [07] | | Intelligent Event Monitoring Network Shut Down | 22.0% | 26.9% | 5.9% | Human Factor |
| [08] | | Major Train Work Accident | 25.8% | 43.6% | 11.3% | Human Factor |
| [09] | | Minor Train Work Accident | 21.5% | 6.8% | 1.5% | Human Factor |
| [10] | | Major Train Public Accident | 26.1% | 49.7% | 13.0% | Human Factor |
| [01] | | Late Train Running | 0.2% | 15.9% | 0.0% | Environmental |
| [02] | | Degradation of Intelligent Monitoring System Physical Assets | 0.2% | 32.4% | 0.1% | Environmental |
| [05] | | Line Closure | 0.0% | 22.5% | 0.0% | Environmental |

From above, we can see the likelihoods, impacts, and risks of the events WRT the Overall Sources (top-node), Human

Factor, and Environmental.

You can also group the grid by WRT source for better display, this is done by dragging the WRT column header to the top left of the grid:




## Show Monetary Values

## Simulated vs Computed Event Likelihoods, Impacts, and Risks (Flaw of Averages)

## Preferences