

## Fault Tree Analysis

### KEY HIGHLIGHTS

- Impressive fault tree diagrams
- High-powered calculation engine
- Qualitative & quantitative analysis
- 15 gate & event types
- 15 input models
- Fault tree & event libraries
- CCF groups & disjoint events
- Minimal cut sets (MCS)
- Importance measures
- SAE ARP4754A/ARP4761 support
- Fault Tree-FMEA linkage
- Dashboard overview
- Device independence

**Relyence® Fault Tree provides the capabilities you need for comprehensive risk assessment using fault tree techniques. Relyence Fault Tree couples an intuitive interface for constructing impressive fault tree diagrams with a high-powered calculation engine capable of performing a wide range of availability risk metrics. With support for an array of logic gate and event types, various input models for events, fault tree and event libraries for reusability, CCF groups, disjoint events, importance measures, minimal cut sets (MCS), and SAE ARP4754A/ARP4761, Relyence Fault Tree offers a complete package for top-down, deductive risk analysis.**

**Fault Tree Diagrams.** The intuitive and efficient interface of Relyence Fault Tree enables you to quickly and easily create well-organized and visually appealing diagrams. Relyence Fault Tree optimally lays out your diagram, and auto-aligns and auto-connects your gates and events. You can manage both small-scale and large-scale diagrams with ease, using transfer gates and our hierarchical pane for one-click navigation.

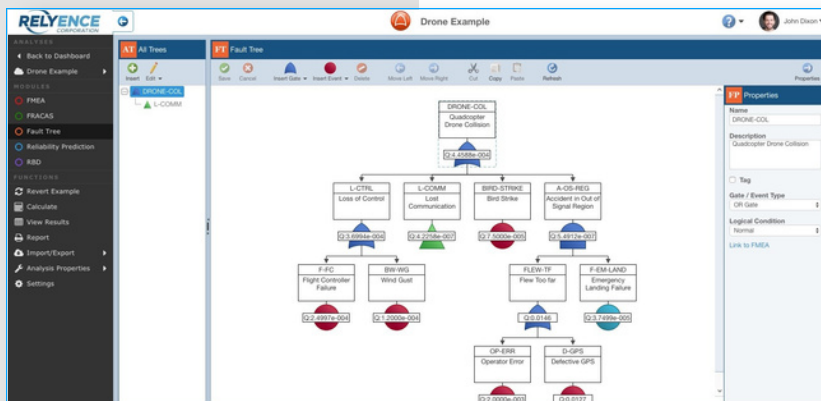
**High-Powered Analytics.** In conjunction with impressive diagramming capabilities, the high-powered calculation engine at the core of Relyence Fault Tree computes all your most important risk metrics. You can choose to perform analytical calculations, run simulations, and select from an array of calculation results including unavailability, failure frequency, as well as importance measures and minimal cut sets. Additionally, Relyence Fault Tree includes an expansive set of input models, and supports modeling of Common Cause Failure (CCF) groups, disjoint events, and repeated events. Relyence Fault Tree also supports performing fault tree analysis based on SAE ARP4754A and ARP4761 guidelines.

**Innovative Features.** Relyence Fault Tree's robust feature set includes cut set highlighting, importing and exporting, integration with other analysis modules, and API support. Relyence's unique Fault Tree-FMEA link can automatically generate fault trees from your FMEAs and provides a powerful way to expertly track and assess your most critical risk items. The ability to create fault tree and event libraries enables you to store and retrieve fault tree data for reusability, consistency, and quick fault tree diagram construction.

**Dashboard for Fault Tree.** The Relyence Fault Tree Dashboard provides an at-a-glance overview of your risk and safety related metrics. Combining all the data you need for quick assessment, the Dashboard offers the ability to monitor and manage your fault tree analyses with efficiency and effectiveness with a choice of customizable widgets. This

focused overview enables you to quickly gauge system health, proactively maintain your risk and safety objectives, and turn insight into action.

**Deployment Choice.** Relyence Fault Tree is built on the Relyence Platform - a browser-based, mobile-friendly framework constructed with today's workplace in mind. Relyence Fault Tree can be installed on-premise at your location, hosted in the Microsoft Cloud to take advantage of Microsoft's industry-leading Azure platform, or hosted in your own private secure cloud. All platforms offer the same features and functions. The choice is yours!



## Fault Tree Analysis

Comprehensive risk assessment using fault tree analysis techniques.

Navigation Pane for Traversing Trees

Quickly Insert Gates & Events

Visually Striking Diagrams

Auto Layout

**Fault Tree Diagram**

Gate & Event Properties

Extensive Risk Metrics

Extensive Help including Videos

Account Management

Top 10 Risk Charts

Calculation Options

Critical Events List with Drilldown

**Example Fault Tree Dashboard**

Minimal Cut Sets (MCS) Ranking

Gate	Unavailability
F-FC	~0.0005
F-FC	~0.0004
DRONE-COL	~0.0003
L-CTRL	~0.0002
A-OS-REG	~0.0002
L-COMM	~0.0002
BAT	~0.0002
STAB	~0.0001
MOT-CTRL	~0.0001
TOPPL	~0.0001

Event	Probability
D-GPS	~0.0005
D-BAT	~0.0004
OP-ERR	~0.0003
D-AT	~0.0002
F-FC	~0.0002
BW-WG	~0.0002
BIRD-ST	~0.0002
F-EM-L	~0.0001
DMOT-C	~0.0001
D-TOPPL	~0.0001

NAME	DESCRIPTION	EVENT TYPE
D-GPS	Defective GPS	Basic Event
D-REF	Defective Wi-Fi Unit	Basic Event
OP-ERR	Operator Error	Basic Event
D-BAT	Defective Battery	Basic Event

NAME	PROBABILITY	EVENTS
DRONE-COL	3.49858e-004	F-FC
DRONE-COL	1.20000e-004	BW-WG
DRONE-COL	7.50000e-005	BIRD-STRIKE
DRONE-COL	4.75021e-007	F-EM-LAND, D-GPS