



# FAIRLite High-Level Description

## Overview

FAIRLite is an Excel application designed to enable simple and effective quantitative analysis of risk scenarios using the Factor Analysis of Information risk (FAIR) framework. Developed by a former CISO who understands the need for efficient and practical tools, FAIRLite is simple to use and yet flexible enough to perform powerful analyses on complex scenarios.

## How it works

Most of the data available in information security scenarios have a significant amount of uncertainty in them. As a result, it's critical for a risk analysis application to provide a credible means of accepting and analyzing uncertain input, and providing results that accurately reflect the level of uncertainty so that management can make well-informed decisions.

To this end, FAIRLite leverages a widely used commercial monte carlo function specifically designed to analyze uncertain input data. Analysis results are then represented in both graphical and table forms that inform management of the most likely outcomes while also accurately reflecting the degree of uncertainty associated with the analysis and the potential for "tail events".

## Use-cases

FAIRLite is primarily intended for use in analyzing discrete risk issues -- i.e., those risk issues that are distilled to a single scenario. Examples of where FAIRLite shines include, but aren't limited to, questions regarding:

- Risk issue prioritization
- How much risk a policy exception represents
- How much risk one or more security or audit findings represent
- How much more or less risk will result from making changes to specific controls (cost-benefit analyses and business case development)

The results from discrete analyses performed in FAIRLite can also be put together to provide stakeholders with the opportunity to make informed comparisons and decisions.

## Application components and example analysis

The following pages provide screen shots of each spreadsheet tab within a completed FAIRLite analysis.

## Scenario Profile

Clearly defining the scenario under analysis is the first critical step toward getting good results. Scenarios that are clearly defined also tend to make data gathering and estimation much easier. The rule of thumb is that the more time spent on scenario definition, the less time required to perform the analysis overall.

The screenshot displays a Microsoft Excel spreadsheet titled "FAIRLite v3.08M (web application example)". The spreadsheet contains a form for defining a scenario profile. The form fields are as follows:

- Analyst:** Sterile example
- Date:** (empty)
- Purpose for the analysis:** How much risk is associated with SQL Injection attacks against an Internet-facing web application
- Asset profile:** This Internet web application allows consumers to enter personal information about buying preferences, etc.. They can also store credit card information to simplify their buying experience. It is this information we're primarily concerned with.
- Threat profile:** Cyber criminals intending to access credit card numbers in order to perpetrate financial fraud. Attacks are directly against the web application via SQL injection vs. indirectly via attacks against the consumer (e.g., phishing).

The spreadsheet interface includes a menu bar (File, Edit, View, Insert, Format, Tools, Data, PUP v6, Window, Monte Carlo, Help), a toolbar, and a status bar at the bottom showing the Windows Start button and the active application window.

## Analysis Input

This page of the application is where data are entered for analysis. For each variable, the analyst enters minimum, most likely (mode), and maximum values that describe the estimate as a distribution. Minimum and Maximum values are estimated to 90% confidence using calibration methods taught during training. The Curve Shape value allows the analyst to describe the level of confidence in their Most Likely estimate by making the curve more or less peaked, as appropriate.

The screenshot displays the FAIRLite v3.0 web application interface within a Microsoft Excel environment. The interface is divided into several sections:

- Header:** Copyright © 2008 - Risk Management Insight, LLC. All rights reserved. An "Analyze" button is present.
- Loss Event Frequency:**

Primary	Min	ML	Max	Curve Shape
TEF	6	12	24	M
Tcap	60%	90%	99%	M
RS	50%	99%	99%	M

Secondary	LEF%	Min	ML	Max	Curve Shape
	95%		99%	99%	H
- LOSS MAGNITUDE:**

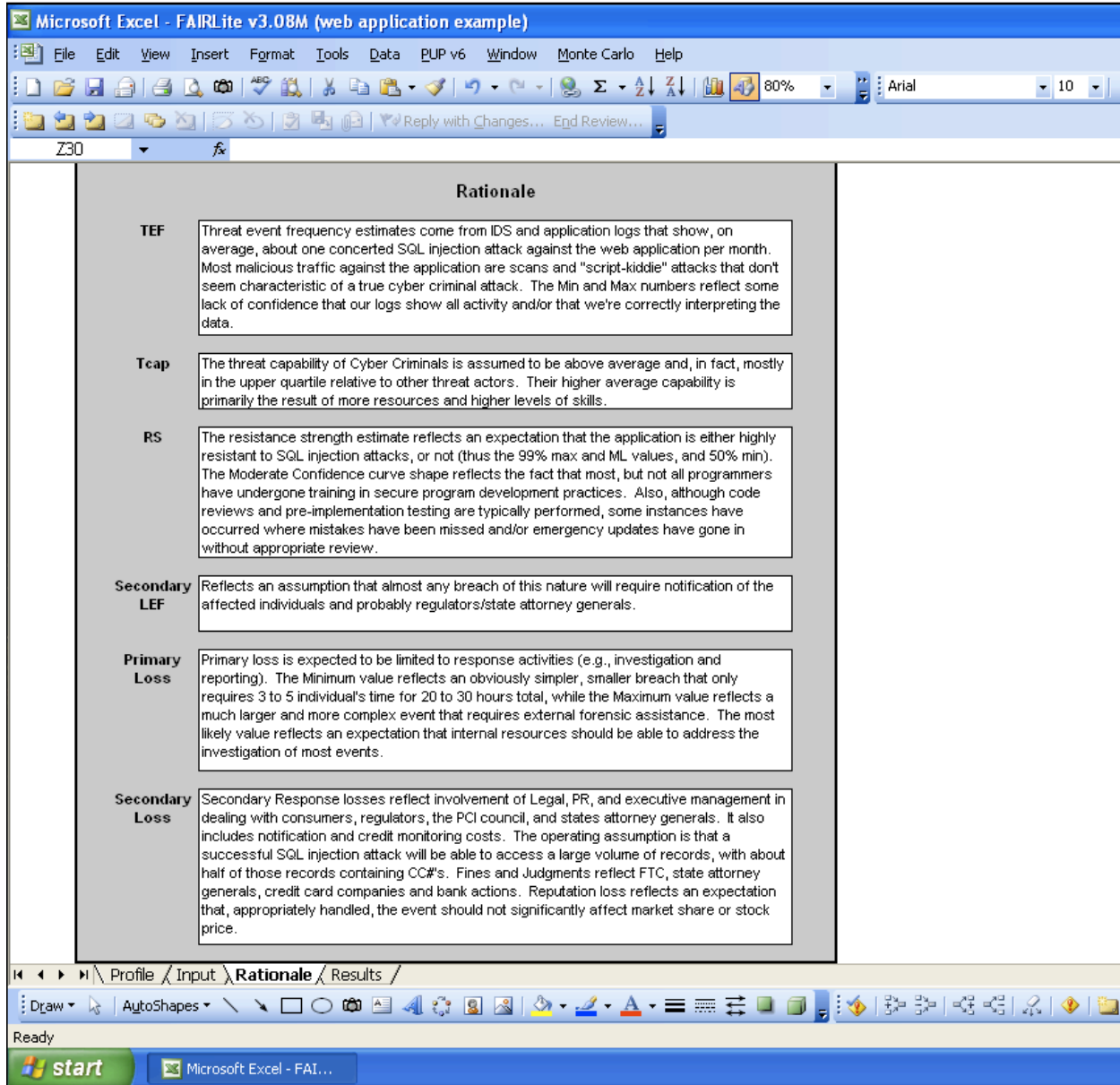
Primary	Min	ML	Max	Curve Shape
Productivity				
Response	\$ 5,000	\$ 25,000	\$ 75,000	M
Replacement				
CompAdv				
F,J				
Reputation				

Secondary	Min	ML	Max	Curve Shape
Productivity				
Response	\$ 25,000	\$ 200,000	\$ 1,000,000	L
Replacement				
CompAdv				
F,J	\$ -	\$ 2,000,000	\$ 60,000,000	L
Reputation	\$ -	\$ 500,000	\$ 20,000,000	L
- Confidence Levels:** A vertical stack of five histograms labeled "Very High", "High", "Medium", "Low", and "Very Low".
- 90% Confidence Limits:** A pie chart showing a small slice representing the 90% confidence interval, with labels "> 95%" and "< 5%".
- Iterations:** A text input field containing the value "3000".
- Reset:** A button located below the histograms.
- Footer:** No warranties regarding the suitability of this tool are expressed or implied.

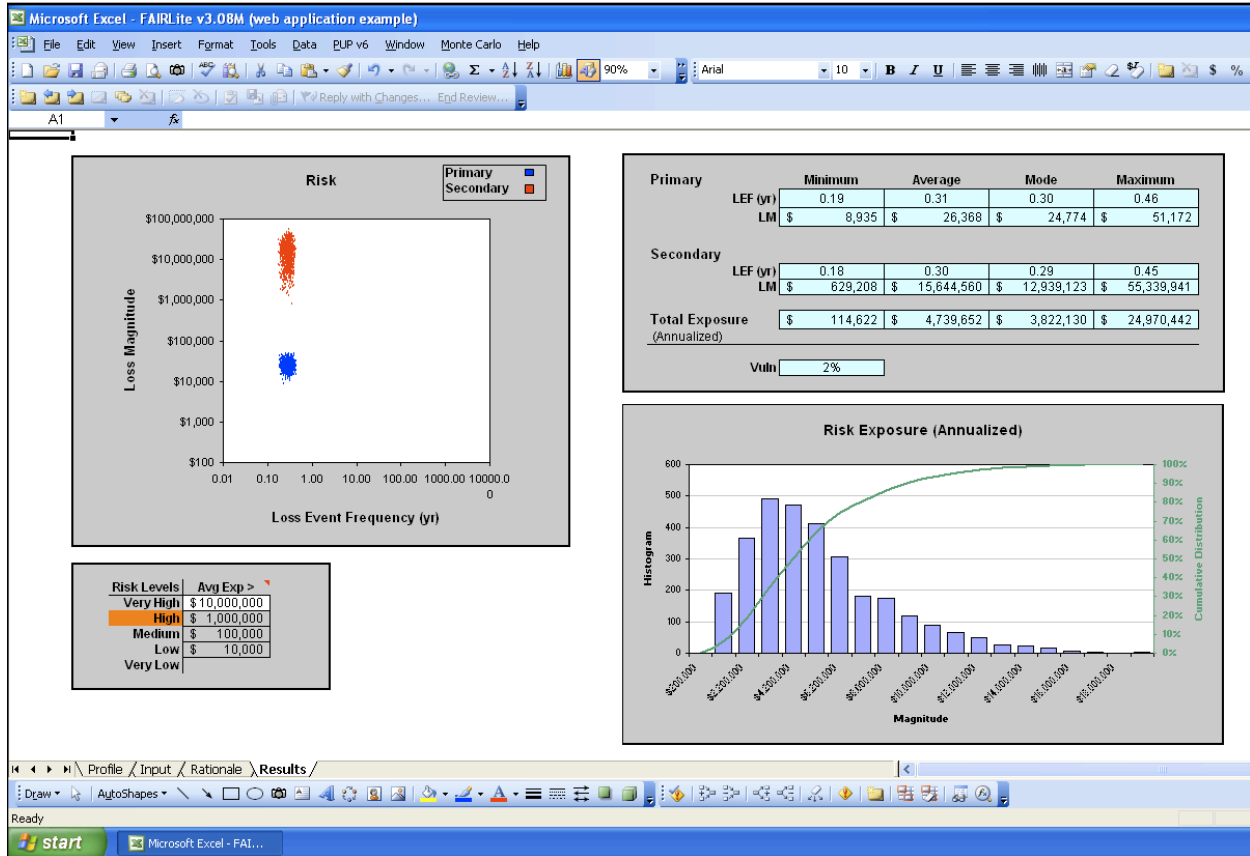
## Input Rationale

This page is where the analyst documents the sources of data, as well as any assumptions and rationale behind the data entered in the Input page. Documenting this information is essential to substantiate the basis for analysis results. This also enables easy reference and explanation of the data at a later date.



## Analysis Results

Analysis results are displayed using multiple charts and tables so that the information can be conveyed to decision-makers in the way that is most useful to them. Information from this page can easily be added to a written report that would normally include the analyst's interpretation and explanation of the results.



## Example report section

The following excerpt from a report demonstrates how analyses performed using FAIRLite can be used to measure and prioritize risk issues. It also provides an example of how FAIRLite can be used to analyze and compare a wide variety of different risk scenario types.

Within this engagement, RMI and Company XYZ analyzed two scenarios, with three sub-scenarios in each:

- Competitive intelligence espionage by foreign countries with legitimate connectivity to Company XYZ resources as a result of “partnership” ventures
  - China
  - Malaysia
  - South Korea
- The risk associated with civil unrest in the Philippines and the potential impact upon resources and business processes supported by the Manila facility
  - Demonstrations that block employee access to the facility
  - Bombing of the facility
  - Compromised sensitive information during a take-over/looting of the facility

### Risk Levels

As Figure 17 below illustrates, China represents far more risk than any other scenario -- over two times as much as Malaysia (on average), and over six times as much as South Korea. Further, it is apparent that far more risk exists within the espionage scenario than the Philippines scenarios.

Figure 17

Scenario	Exposure			
	Min	Avg	Mode	Max
China	\$ 16,023	\$ 1,751,666	\$ 759,768	\$ 20,383,543
Malaysia	\$ 10,163	\$ 644,807	\$ 319,110	\$ 7,456,515
South Korea	\$ 1,186	\$ 238,679	\$ 23,643	\$ 2,998,210
Philippines Demonstrations	\$ 15,397	\$ 86,640	\$ 98,402	\$ 293,377
Philippines Bombing	\$ 4,637	\$ 25,268	\$ 22,536	\$ 86,827
Philippines Sensitive Info	\$ 15,095	\$ 42,852	\$ 42,667	\$ 75,828
<b>Total</b>	<b>\$ 61,813</b>	<b>\$ 2,517,265</b>	<b>\$ 1,323,624</b>	<b>\$ 37,203,263</b>

These findings are further illustrated in Figure 18 below.

Figure 18

