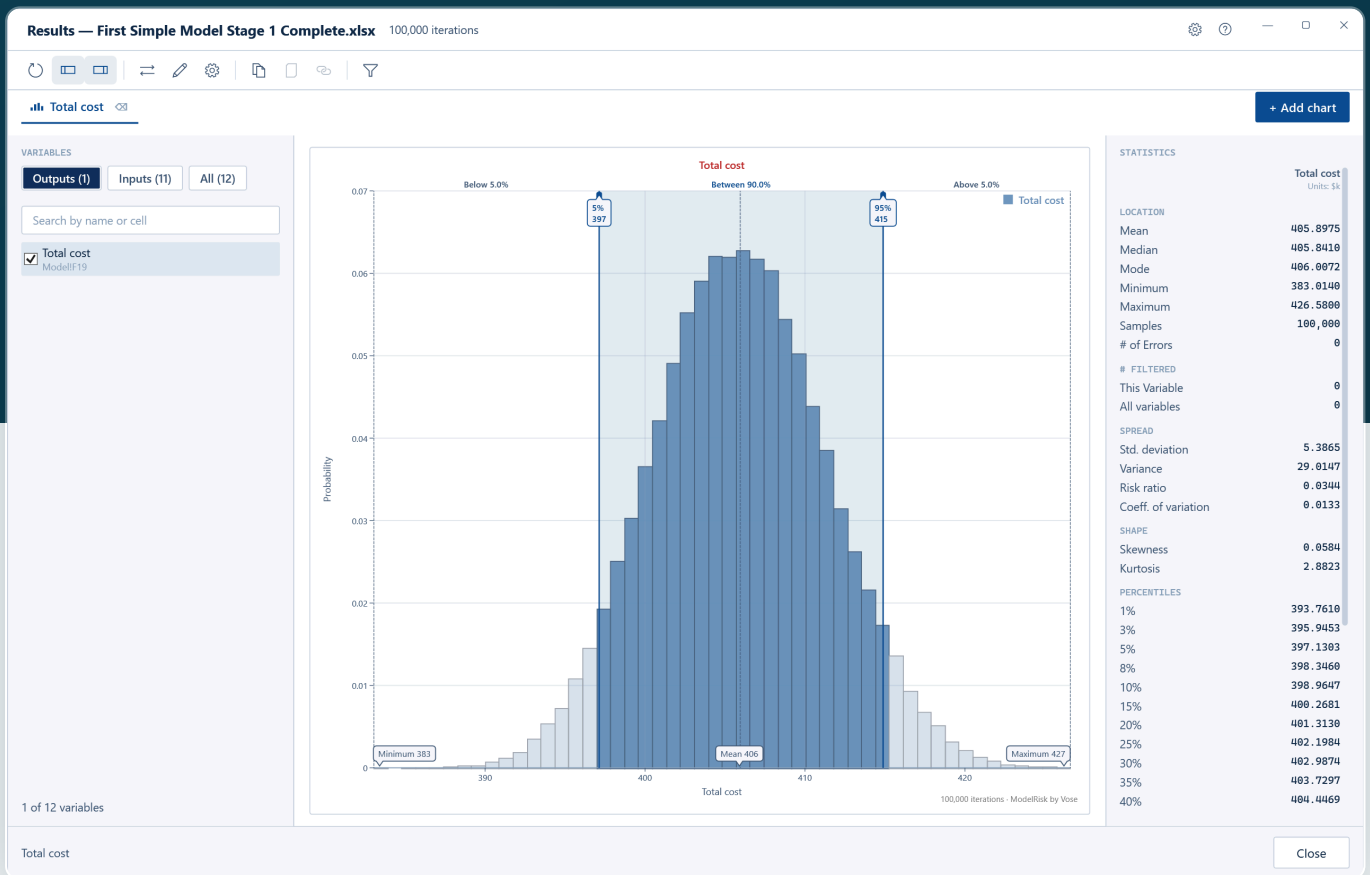




Know the odds before you commit

ModelRisk adds Monte Carlo simulation to the Excel models you already have. It shows how likely you are to meet a budget, a deadline or a return, how much contingency or capital you need, and which risks drive the answer.



ModelRisk's Results window: a building project's total cost, simulated 100,000 times, with a 90% chance of landing between \$397k and \$415k.

136

probability distributions

34

time series models

14

copulas for linked risks

15 days

free trial of the full product

One number hides the risk

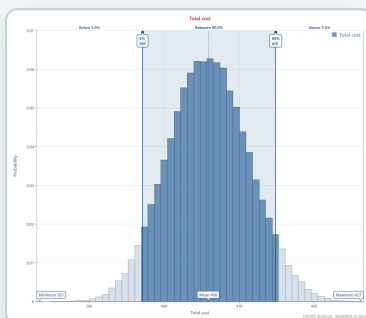
Most plans end in one number: a cost, a finish date or an NPV, worked out from the best guess for every input. That number is usually too optimistic, and it can't show how likely it is to be missed. ModelRisk shows the whole range of outcomes, how likely each one is, and why.

1 Your spreadsheet gives one number

	Best guess (\$k)
Purchase land	110.0
Purchase tax (5% of land price)	5.5
Lager fees	2.5
Lay Foundations	23.0
Construct walls	78.0
Roofing and insulation	95.0
Windows and doors	23.0
Electricity and plumbing	17.0
Plastering	28.0
Decoration	13.0
Fixtures and fittings	9.0
Total cost	404.0

Add up the best guess for each of the eleven costs and the building comes to **\$404k**. It looks precise, but every line is an estimate.

2 ModelRisk runs 100,000 futures



Each cost gets a minimum, best guess and maximum, and the model runs 100,000 times. The average is **\$406k**, and in **more than 60 futures out of 100** the building costs more than \$404k.

3 And shows what drives the result



Roofing and insulation, then the walls, move the total most. Those are the estimates to firm up, and the risks to manage, first.

From ModelRisk's first tutorial model, the cost of a building project, run 100,000 times. To be 95% sure of the budget, plan for about \$415k: \$11k more than the best guess, and the contingency the single number left out.

What ModelRisk gives you



Answers in odds you can plan with

How likely a budget, a deadline or a return is to hold; the P80 budget, which has an 80% chance of not being exceeded; the contingency or capital to set aside.



Effort where it changes the answer

Tornado and spider charts rank the risks that drive the result, so you know which estimates to firm up and which risks to manage first.



Find the best decision

ModelRisk Optimizer searches the decisions in your model for the best simulated result, while keeping to your constraints.



Your own Excel model

Nothing to rebuild and no new platform. Every uncertain cell stays an ordinary Excel formula that colleagues can open, check and audit.



Methods with depth

136 distributions, fitting to data, 14 copulas, 34 time series models and aggregate loss methods, there when the problem needs them.

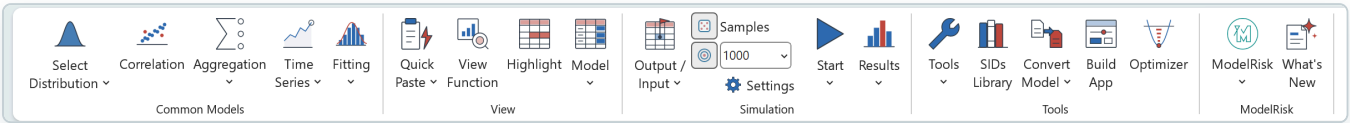


One edition, an easy switch

Every feature is in every licence. Converters bring @RISK models across, a whole folder at a time if needed, and Crystal Ball models too.

From your spreadsheet to a decision, in four steps

ModelRisk is an add-in for Microsoft Excel. You keep your model and your formulas; ModelRisk adds a ribbon whose groups follow these steps from left to right.



1

Describe the uncertainty
Give each uncertain estimate a range: low, most likely and high, any of 136 distributions, or a fit to your own data.

2

Link what moves together
Correlate risks that move together, and project prices, rates or demand over time with time series models.

3

Simulate
Click Start and ModelRisk recalculates the model thousands of times, each time with a different possible future.

4

Decide
See how likely each outcome is and what drives it, test what-ifs and stress cases, and search for the best decision.

=VoseOutput(Model1!B19,"\$k")+SUM(F7:F17)				
	Minimum (\$k)	Best guess (\$k)	Maximum(\$k)	Random value (\$k)
Purchase land	105.0	110.0	110	108.42
Purchase tax (5% of land price)	5.3	5.5	5.5	5.34
Lagar fees	2.5	2.5	3.5	2.84
Lay Foundations	22.0	23.0	26	23.36
Construct walls	70.0	78.0	82	80.47
Roofing and insulation	90.0	95.0	105	93.33
Windows and doors	20.0	23.0	26	24.23
Electricity and plumbing	14.0	17.0	21	16.28
Plastering	25.0	28.0	33	29.07
Decoration	11.0	13.0	16	14.57
Fixtures and fittings	6.0	9.0	15	11.63
Total cost	370.8	404.0	443.0	409.5

Each uncertain cost becomes a ModelRisk formula, here a Triangle distribution of its minimum, best guess and maximum, and the total is marked as an output. Every recalculation draws new values: this one totals \$409.5k.

A spreadsheet normally works out one answer from one set of inputs. ModelRisk gives each uncertain input a range, recalculates the model thousands of times, and shows every outcome the model can produce and how likely each one is.

Three cases, best, base and worst, show three outcomes but not how likely any of them is. Simulation lets every input vary at once, with the links between them.

Where teams use ModelRisk

Wherever a budget, a date or a return rests on estimates. ModelRisk is used by analysts, engineers, cost estimators, actuaries, project controls and finance teams: the people who build models in Excel to support a decision.

Capital projects and construction
P80 budgets, bid contingency and schedule risk, from bid to handover

Oil and gas
Reserves, production, first oil and field value, from prospect to decommissioning

Power, renewables and utilities
Energy yield, capex and operation dates, and which projects and network investments to fund

Mining and metals
Resource, capex, production and mine value, from exploration to closure

Aerospace and defence
Cost at completion, schedule and supply, from bid to fleet in service

Manufacturing
Yield, tolerances, reliability and supply, from design to the factory floor

Insurance and reinsurance
Claims, premiums, reinsurance and capital, from pricing to the 1-in-200 year

Corporate finance and investment
Valuations, M&A and portfolios, from the deal price to the efficient frontier

Pharma and life sciences
Timelines, budgets, success and value, from Phase I to peak sales

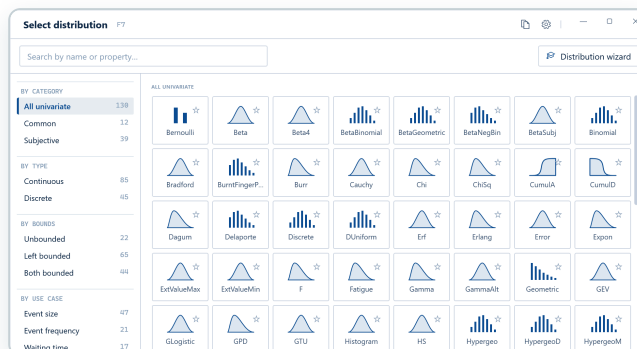
Ranges, data and the links between risks

DISTRIBUTIONS

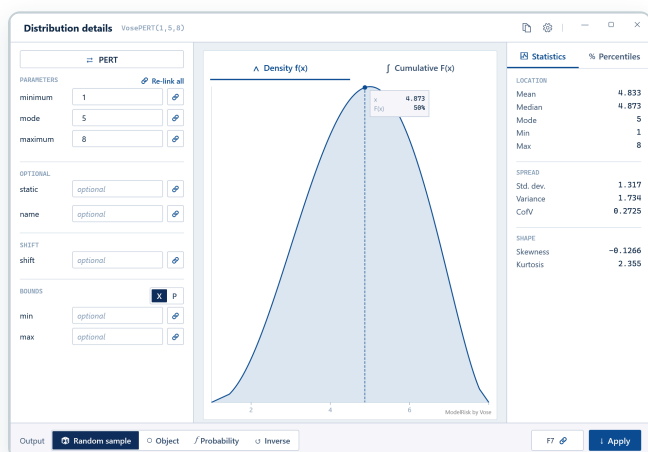
136 distributions, and help to pick the right one

Replace a single estimate with a range. The Select Distribution window groups 136 distributions by what they model, from PERT and Triangle for expert estimates to specialist families for extreme values, insurance losses and reliability, each with an interactive guide. Each uncertain cell stays an ordinary Excel formula, such as `=VosePERT(36, 40, 46)`.

- Expert-estimate tools: low, most likely and high, or any percentiles you know
- The Shaper, to draw your own shape when no standard distribution fits
- Distribution Objects, for exact percentiles and probabilities without simulating



The Select Distribution window, here showing the univariate distributions. Each tile shows a distribution's shape; search, or filter by category, type, bounds or use case.



The Distribution details window: the parameters, the shape and the statistics of `VosePERT(1, 5, 8)` before it goes into a cell.

FITTING TO DATA

Let your data choose the distribution

ModelRisk fits distributions, time series and copulas to data in your spreadsheet by maximum likelihood. It ranks the candidates on three information criteria (SIC, HQIC and AIC), which penalise unnecessary parameters, and overlays every fit on your data so you can judge the tails by eye as well as by score.

- One function does the whole job: `VoseOptimalFit` picks the best-ranked distribution
- Bayesian model averaging blends close candidates instead of forcing a single winner
- With parameter uncertainty switched on, a small dataset shows up as a wider range of results

CORRELATION

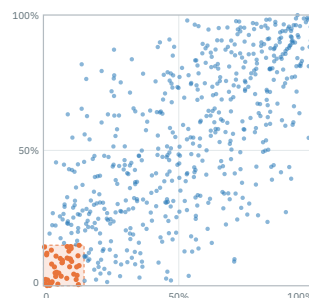
Link related risks with correlation and copulas

Risks are rarely independent: costs overrun together, and prices and volumes move together. Leaving those links out makes the range of results look narrower than it is. ModelRisk links inputs with rank correlation or 14 copulas, which also set how often extreme values come together.

- Normal, Student-t, Clayton, Gumbel, Frank and more, bivariate and multivariate
- The data copula, for patterns in your data that no formula describes
- Copulas fitted to your data, with the candidates compared

Normal copula

43 of 600 pairs in the low corner



Clayton copula

75 of 600 pairs in the low corner

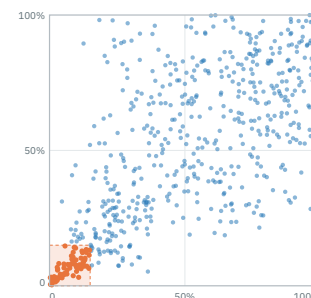


Illustration: 600 simulated pairs of inputs, as percentiles, with the same rank correlation (0.70). The shaded corner holds the pairs with both inputs in their lowest 15%: the Clayton copula puts more pairs there, so low values come together more often.

Time, totals and speed

TIME SERIES

Forecast how values change over time

Some inputs are a series, not one number: prices, rates, demand or volumes, month by month. ModelRisk's 34 time series models project them forward, with the uncertainty growing the further ahead you look. Fit a model to history, or build a series from expert estimates when there is no history.

- 34 models, including GBM, seasonal GBM, ARMA, ARCH/GARCH and Yule
- Multivariate versions that keep related series consistent
- Expert-input series from three-point, range, percentile or saturation estimates for each period

An index: 24 months of history, a 24-month forecast

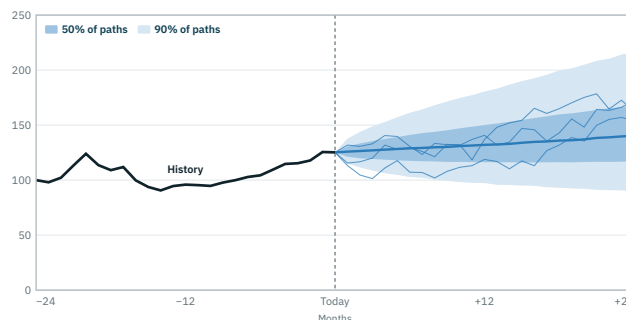


Illustration: a geometric Brownian motion (**VoseTimeGBM**) continuing the history. The bands hold 50% and 90% of 10,000 simulated paths; the thin lines are three of them.

ONE CELL, A WHOLE FREQUENCY-SEVERITY MODEL

```
=VoseAggregateMC(VosePoisson(100),  
VoseLognormalObject(10, 5))
```

The total of a random number of claims (Poisson, 100 on average), each with a random size (Lognormal), in a single formula.

AGGREGATE AND OBJECTS

Keep large models small

Distribution Objects and aggregate functions do in one cell what would otherwise take a row per event. A frequency-severity model becomes one formula that adds up a random number of random losses, by Monte Carlo, Panjer, FFT or de Pril methods. Fewer cells mean faster simulation and fewer places for errors to hide.

- Deductibles and insurance layers applied to a whole distribution
- Splicing a body distribution onto a heavy tail
- Combining several experts' estimates into one distribution

TURBO SIMULATION

Large models, run fast

Turbo is an optional engine that you switch on per workbook. Large workbooks take a few seconds to prepare the first time, then run at full speed. Results are statistically equivalent to the classic engine, with a consistency check built into the first Turbo run. The gain depends on the model.

About 200×

faster in the simulation phase with Turbo: the median across 89 internal test models*

Classic engine: Excel recalculates the workbook in every iteration.

Turbo: ModelRisk analyses the model once, compiles only the cells that change between iterations, and runs them on every processor core.

* Simulation phase only, excluding the one-time model analysis and opening the workbook. Median across 89 models from Vose's internal test library, same workbook, 1,000 iterations, Turbo against ModelRisk's classic engine. The gain depends on the model.

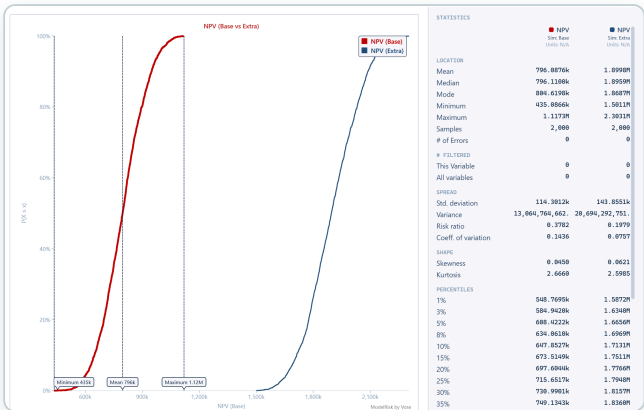
Results, and the best decision

RESULTS AND SENSITIVITY

See how likely each outcome is, and why

When a simulation finishes, the Results Viewer opens with every input and output listed. Nine chart types, including histogram, cumulative, tornado, spider and scatter plots, sit next to full statistics. Compare several runs side by side, and use sensitivity tools to ask what if.

- Go To Sample jumps to the exact scenario behind any outlier
- A histogram sparkline inside every input and output cell
- Impact Analysis, Goal Seek on simulated results, and Extreme Scenario Analysis for stress testing
- Reports, and export to Excel, Word, PowerPoint, PDF and SIPMath 3.0



The Results Viewer comparing two runs of one model, the base plan and an extra investment: cumulative curves on one chart, and the statistics of each run side by side.

Best	1670.8	Results Overview
		Solution
		Goals 1 / 1
		Constraints 1 / 1
		Feasible Yes
		Engine Vertex Detector
		Model Type Stochastic
		Simulations 400
		Time, s 2.486
		Stop Reason Trials limit
		Best Found at Trial 239
		Constraints
		Hard Satisfied 1 / 1
		Soft Satisfied 0 / 0
		Infeasible Trials 4.8 %
		Performance
		Samples per Trial 1000
		Trials/sec 160.9035
		Cache Hits 0

The Results Overview of an Optimizer run: the goal met, every hard constraint satisfied, and how the search went.

OPTIMIZER

Find the best decision under uncertainty

Some questions ask for the best choice, not the odds: what to fund, how much to order, how big to build. ModelRisk Optimizer searches the decisions in your model for the best value of any simulated result, such as the mean, a percentile or the chance of meeting a target, while keeping to your constraints. It handles stochastic models, where every trial is a simulation, and deterministic ones.

- Continuous, integer, binary or list decisions, with bounds that can be worksheet cells
- Goals on any simulated statistic: mean, percentile, probability, CVaR and more
- Hard or soft constraints, and an efficient frontier with one optimization per point
- Reads RISKOptimizer and Crystal Ball optimization models



Check it

Select any ModelRisk cell and click View Function to see exactly what it does. An invalid input explains what is wrong instead of a bare error; the help covers more than 1,000 topics, and Excel's own auditing works on every ModelRisk function.



Switch to it

The built-in converter translates @RISK models one at a time or a whole folder at once, without @RISK installed, and lists every converted formula. A Crystal Ball converter and an optional @RISK-style ribbon make the move easier.

@RISK	ModelRisk
=RiskLognorm(120, 25)	→ =VoseLognormal(120, 25)
=RiskPert(420, 480, 560)	→ =VosePERT(420, 480, 560)
=RiskOutput("NPV")+...	→ =VoseOutput("NPV")+...



Share it

The SWAP tool saves a copy in which every ModelRisk function is replaced by a fixed value, so it works as a normal Excel file. Results export to Excel, Word, PowerPoint and PDF, and ModelRisk integrates with Pelican, Vose's risk register.



Automate it

Control ModelRisk from Excel VBA, or let AI assistants such as Claude, Cursor and Zed read, build and run models through the open-source ModelRisk MCP server, with a preview of every change before you approve it.

Every ModelRisk feature

Everything here is included in every ModelRisk licence: one edition, with no premium tier to upgrade to. The trial is the full product: download it free for 15 days at vosesoftware.com/Risk-In-Excel.

AREA	WHAT'S INCLUDED
Distributions	136 distributions grouped by what they model; expert-estimate distributions (PERT, Modified PERT, Triangle) and tools; the Shaper for custom shapes; an interactive guide to each one; Distribution Objects for exact percentiles and probabilities without simulating.
Fitting	Maximum-likelihood fitting of distributions, time series and copulas; ranking by SIC, HQIC and AIC; every fit overlaid on the data; Bayesian model averaging; parameter uncertainty.
Time series	34 models, including GBM, seasonal GBM, ARMA, ARCH/GARCH and Yule; multivariate versions; series from expert input (three-point, range, percentile or saturation estimates per period).
Correlation	Rank correlation and 14 copulas, including Normal, Student-t, Clayton, Gumbel, Frank and the data copula; bivariate and multivariate; fitted to data; joint-success and target-point tools on the correlation plot.
Aggregate and Objects	Frequency–severity totals by Monte Carlo, Panjer, FFT or de Pril; deductibles and insurance layers; splicing a body onto a heavy tail; combining several experts' estimates.
Turbo simulation	An optional engine, switched on per workbook, that analyses the model once, compiles only the cells that change and runs on every core; simulation phase a median of about 200× faster across 89 internal test models (see page 5).
Results	Results Viewer with nine chart types, including tornado, spider and scatter; full statistics; multi-run comparison; target-point scatter; Go To Sample; a histogram sparkline in every input and output cell; results files that reopen without the model.
Reporting	Reports of summary and detailed statistics, inputs, outputs, sensitivity, scenarios and simulation data; export to Excel, Word, PowerPoint, PDF and SIPMath 3.0; the SID library to store and reuse simulation data.
Optimizer	Optimization under uncertainty and of deterministic models: goals on any simulated statistic; continuous, integer, binary or list decisions; groups for budgets, recipes, orderings and schedules; hard or soft constraints; efficient frontier; reads RISKOptimizer and Crystal Ball optimization models.
Decision analysis	Goal Seek on simulated results (find the input value that makes a statistic, such as the mean, hit a target); Impact Analysis, one input at a time; Extreme Scenario Analysis for stress testing.
Model checking	View Function; plain-language error messages; more than 1,000 help topics; the Model Tool to manage inputs and outputs in bulk; full Excel auditing; works with Excel Tables, Power Query and modern Excel functions.
Switching and sharing	@RISK converter, one model or a whole folder, with a report of every converted formula; Crystal Ball converter; an @RISK-style ribbon; the SWAP tool for a copy with fixed values; Pelican integration.
Automation and AI	Control ModelRisk from Excel VBA; the open-source ModelRisk MCP server (MIT licence, more than 50 tools) lets AI assistants such as Claude, Cursor and Zed read, build and run models, with every change previewed before you approve it.

GET STARTED

Try ModelRisk on your own model

Put ranges into a model you already have and see the odds for yourself. Scan a code with your phone's camera to go straight there.



Download the free trial

The full product, free for 15 days, with example models to start from. No payment details needed.



Book a live demo

A 15- or 30-minute online demo of the features you want to see, with time for your questions.

One edition, every feature

ModelRisk is sold as an annual licence per user, in one edition with every feature in this brochure. Time and volume discounts lower the price, and universities and students have an academic offer. See current prices at vosesoftware.com/pricing.php.

About Vose Software

Vose Software builds risk analysis software in Gent, Belgium. Its co-founder, the late David Vose, wrote *Risk Analysis: A Quantitative Guide*. Alongside ModelRisk, Vose makes ModelChoice for decision analysis in Excel, Tamara for project cost and schedule risk, and Pelican for risk registers and enterprise risk management.

ORGANISATIONS THAT USE VOSE SOFTWARE

Deloitte.

Capgemini

Grant Thornton

NASA

OLYMPUS

MERCK

DURACELL

Air Liquide

Schlumberger

BOEING

Ministry of Defence

amazon

Munich RE

DOW

OLIVER WYMAN

DUPONT

Roche

System requirements

Full details: vosesoftware.com/System-Requirements.php

WINDOWS

Windows 10 or 11

EXCEL

Excel 2016, 2019 or Microsoft 365, 32-bit or 64-bit

ALSO NEEDED

.NET Framework 4.8

MODEL RISK MCP SERVER

Excel 2019 or later



Vose Software BV

Kompasplein 14, 9000 Gent, Belgium

info@vosesoftware.com · www.vosesoftware.com

October 2026. Features as described on vosesoftware.com at the time of writing. @RISK and RISKOptimizer are trademarks of Lumivero; Crystal Ball is a trademark of Oracle; Excel and Microsoft 365 are trademarks of Microsoft. Logos are the property of their owners.