

ProRisk Professional Risk Analysis

ProRisk is a new decision support tool for project managers to assist in the identification, management and mitigation of risks associated with project management tasks. ProRisk provides a fully interactive, graphically based tool for the risk manager to:

- build a risk model for a project and the organization undertaking the project
- describe the risk properties for all elements in the model
- use the analysis and presentation facilities of ProRisk to assist in identifying high risk elements in the project
- identify, document and manage action plans to mitigate these high risk elements
- re-evaluate the risk model to monitor impacts and changes in risk levels
- monitor the development of risk estimates as the project proceeds.

ProRisk is targeted at project management tasks where there are many potential impacts on the conduct of the project emanating from a range sources, including availability of human resources and technical skills, requirements variations, design/construction tool performance, contract legalities and management methods. ProRisk has been specifically designed to represent all these types of risk factors in a consistent and integrated fashion within a single management tool.

ProRisk is particularly well suited to those difficult-to-manage projects like large software and IT development projects, projects involving new technologies and projects involving potential impacts from externalities.

Some of the key features of ProRisk include:

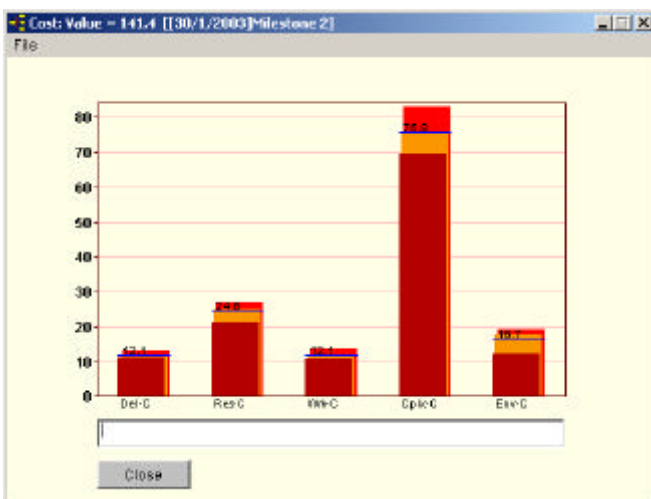
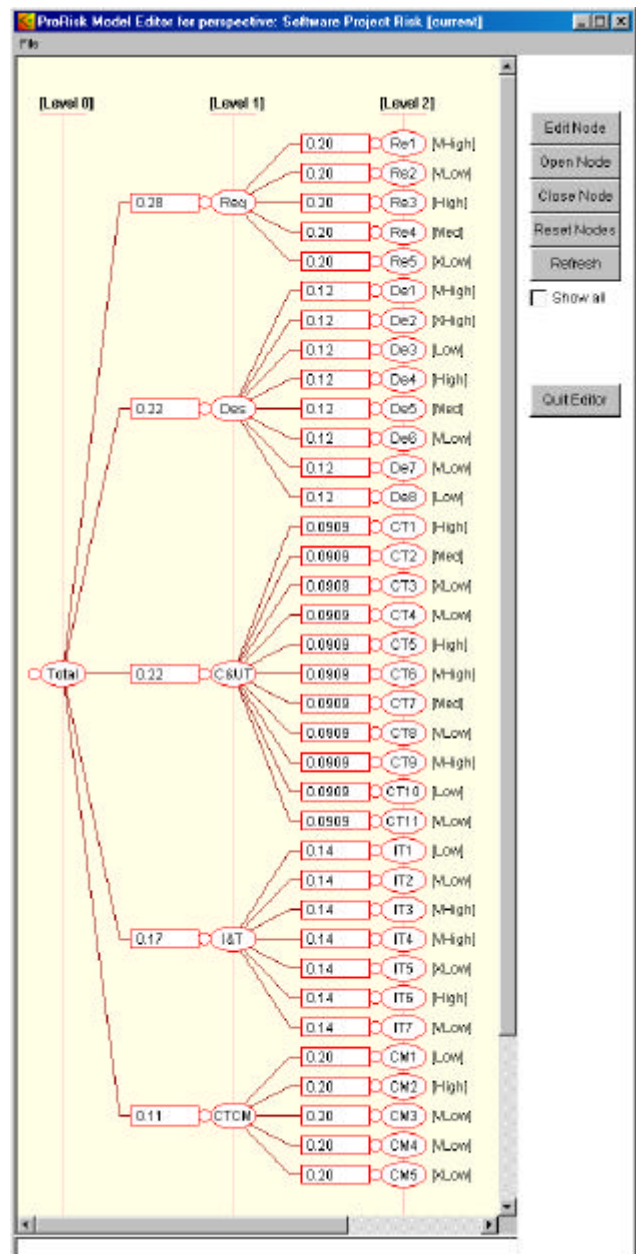
Fully interactive visual editor to design, construct and edit risk trees that describe all the risk elements in the project and their interrelationships. The risk tree will describe how the risk assessments for each risk factor are aggregated up the risk tree. Intermediate branch nodes describe groupings of like, or related risk elements, and assist in work breakdown tasks and allocation of management responsibilities.

Each project can have several risk perspectives, each with its own risk tree building on a common set of underlying knowledge about the risk elements in the project.

Each node in the risk tree (from the top down) can be visually inspected to show how the children nodes contribute to the risk values for that node. High-risk children nodes can be quickly identified, and selected nodes can be interrogated further to discover which lower level nodes are contributing to their levels of risk.

The risk value scales are user definable. They may be implemented to describe probability scales on 0 to 1, or 0 to 100% scales. They may, alternatively be defined to provide actual cost or time values if the risk impacts are described in this way.

ProRisk supports several approaches to risk estimation: as single most likely estimates, or as a triplet value defining the worst-case, most-likely and best-case scenarios. This range of estimates can also be displayed to show the potential range of impacts. Models can be probability-based, or built from cost-driver models.



As the project proceeds, better information becomes available about the levels of risk. This may arise after mitigation strategies have been implemented or as parts of the project become complete (hence reducing their risk to a known outcome).

ProRisk supports the evolution of the project over time, in terms of risk changes and mitigation costs, so that the changing risk values can be recorded, monitored and graphically displayed.

When a high risk factor is identified the risk manager will consider implementing an action plan that will describe what is to be done, who will do it and what resources are required.

The risk manager can see at a glance what action plans are active and which ones have been completed.

At the completion of an action plan the risk values for the associated risk factors may be revised to reflect the increased knowledge or better outcomes following the completion of the action plan.

Risk factors can be conveniently grouped into organizational clusters for management control and responsibility delegation.

Theoretical background

Risk models can be built around a range of theoretical concepts including probability-based analysis, cost-driver approaches and fuzzy-logic models.

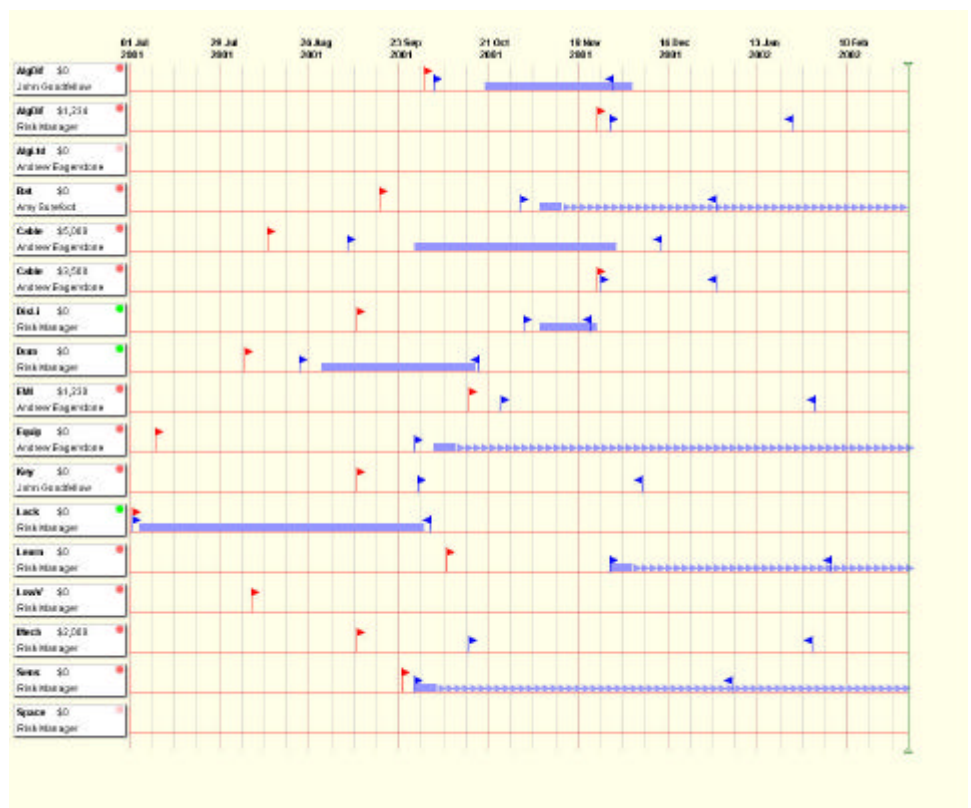
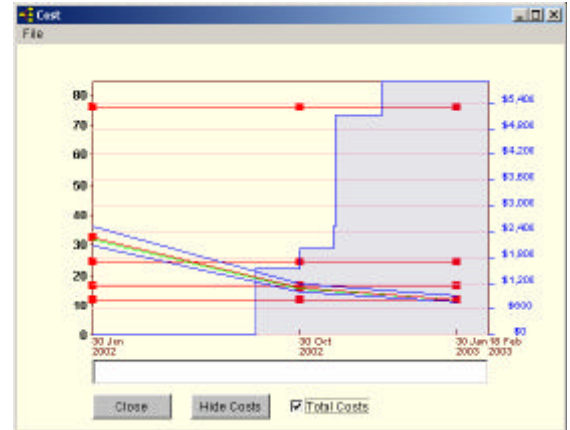
Probability-based models require the risk model to be described in terms of an estimated risk value (probability) that an event will occur and a measure of the impact that event (a weighting factor) will have on the likely success of the project or some aspect of the project. The risk factors are to be considered as essentially independent of each other, so an additive aggregation calculation is used.

Cost-driver models provide direct estimates of the risk events on some measure of cost (perhaps in dollar or time terms) based on the product of sets of risk factors.

Fuzzy logic models presume that it will always be the worst-case scenario that determines the risk levels for the project, hence a maxi-max calculation is performed.

Decision Tree models using AND/OR logics to combine the effect of several related risk events.

Each risk factor can be measured as a single most-likely value scale, or as triple-valued measurement describing the worst-case estimate, the most-likely estimate and the best-case estimate. In this latter case, an average value is also computed based on the arithmetic or PERT mean values.



Minimum system requirements:

Windows 95, 98, NT, 2000 or Linux; 300 MHz processor, Requires Java Run Time (JRE) system 1.2 or better.

Licensing:

ProRisk is available for individual workstations, and site licenses for educational institutions. A free time limited demonstration version is also available.

