



ERSG/Prod/Serv/FS/007/09

SUBJECT:
EVENT TREE ANALYSIS

OUR SERVICES COVER THE FOLLOWING AREAS:

- Process Hazard Analysis
- Enterprise Risk Management
- Project Management
- RUBI-Software
- Business Continuity Systems
- Process Safety Management
- Risk Training Solutions



EVENT TREE ANALYSIS [ETA]

Risk Management Solutions for Dynamic and Progressive Industry

Introduction

An event tree analysis (ETA) is an inductive procedure that shows all possible outcomes resulting from an accidental (initiating) event, taking into account whether installed safety barriers are functioning or not, and additional events and factors. By studying all relevant accidental events (that have been identified by a preliminary hazard analysis, a HAZOP, or some other technique), the ETA can be used to identify all potential accident scenarios and sequences in a complex system. Design and procedural weaknesses can be identified, and probabilities of the various outcomes from an accidental event can be determined.

Services

ERSG can provide a full FTA Risk Assessment services, using a standard technique.

The ERSG event tree analysis technique is to evaluate the probability of the top event using analytical or statistical methods. These calculations involve system quantitative reliability and maintainability information, such as failure probability, failure rate, or repair rate. The ETA will provide useful information concerning the likelihood of a failure and the means by which such a failure could occur. Efforts to improve system safety and reliability can be focused and refined using the results of the ETA.

OUR SERVICES COVER THE FOLLOWING METHODS

Methodology

ERSG uses the following main steps to develop an Event Tree Analysis:

1. Identify (and define) a relevant accidental (initial) event that may give rise to unwanted consequences
2. Identify the barriers that are designed to deal with the accidental event
3. Construct the event tree
4. Describe the (potential) resulting accident sequences
5. Determine the frequency of the accidental event and the (conditional) probabilities of the branches in the event tree
6. Calculate the probabilities/frequencies for the identified consequences (outcomes)
7. Compile and present the results from the analysis

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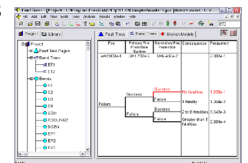
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ETA SOFTWARE TOOL

The ERSG Risk Division uses the IsoGraph FTA software for risk assessment. FaultTree+ includes three modules:

- Fault Tree Analysis.** Allowing you to construct and analyse *fault tree diagrams*.
- Event Tree Analysis.** *Event trees* allow you to analyse the possible outcomes of an event occurring.
- Markov Analysis.** Enabling



Requirements: 4Mb RAM, 2Mb Hard Disk, Windows®, 98, NT, 2000, XP.