

# Pro-Opta

## Reliability Analysis and Optimization Suite

### Highlights

#### What does Pro-Opta Enable?

- Analysis of field maintenance data and computation of system metrics
- Identification of key drivers of system unreliability
- Prediction of equipment lifecycle performance
- Assessment of modifications to maintenance practices
- Ranking of potential reliability improvement and inventory options
- Modeling of system reliability using graphical fault tree
- Evaluation of fleets with multiple configurations
- Identification of trade-offs of cost versus performance

#### Why is Pro-Opta Important?

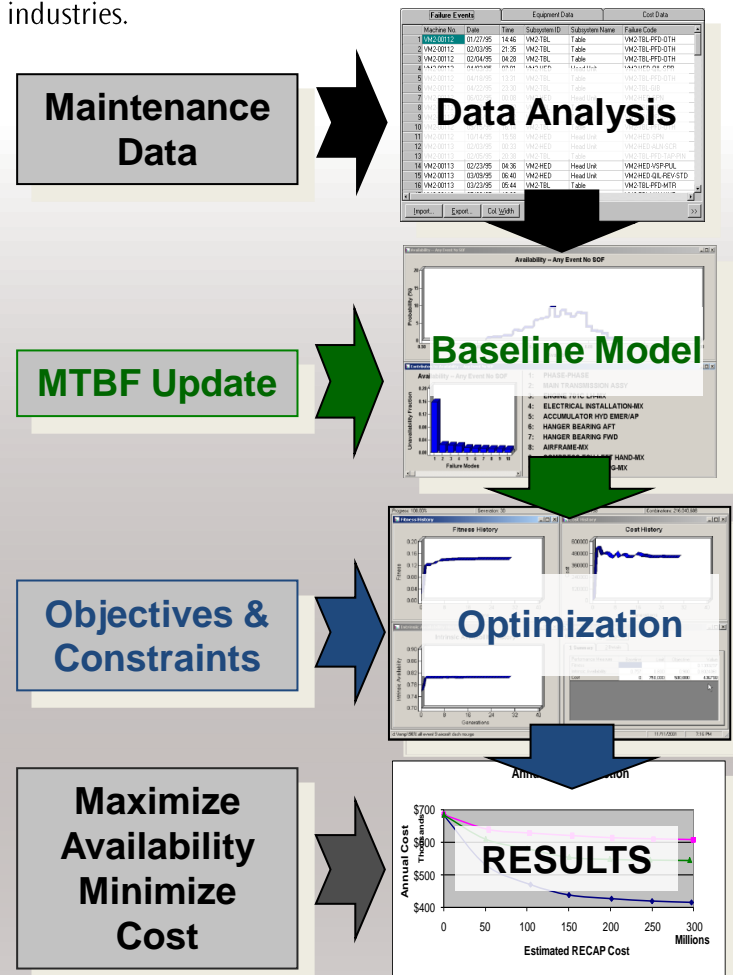
- Determines best allocation of resources to meet a systems reliability objectives
- Examines relative costs and benefits of different design options
- Assists analysts in identifying which components contribute most to downtime, MTBF, and cost
- Provides insight into the effects on system reliability of planned upgrades

#### Example Applications

- Evaluation of energy efficiency improvements
- Device reliability prediction
- Modernization upgrade impact analysis
- Sustainment assessment
- Fleet reliability planning

### Pro-Opta Overview

The Pro-Opta software package is a reliability analysis and optimization suite that provides an analyst with the information needed to make strategic decisions in the competitive marketplace. The tool offers the flexibility to create a system's reliability model using either field data (maintenance records) or summarized data (for example, from a failure mode, effects, and criticality analysis). Once the model is created, decisions can be made on which components should be improved based on sensitivity analysis. Potential spares and reliability improvement options can be assessed and ranked to aid in evaluation of alternatives based on availability, reliability, and cost impacts. Pro-Opta is applicable to defense, energy, aviation, and commercial industries.



# Pro-Opta

## Key Features

### Field Data Analysis

- Imports field data containing maintenance events
- Determines which types of events and which machines are causing the most problems
- Provides analysts the capability to focus on key areas for system reliability improvements

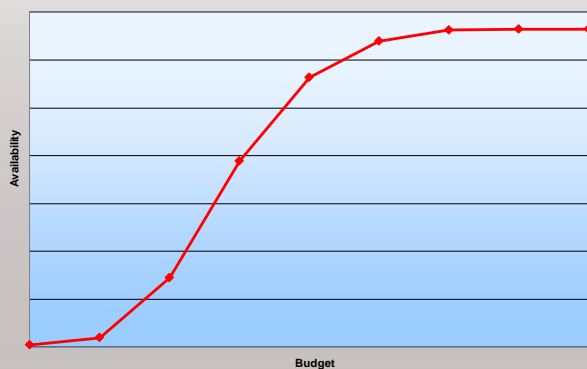
### Fault Tree Analysis

- Deductive analytical process for determining the logical relationship between the failure of a system and its components
- Quantifies the immediate, necessary, and sufficient causes of a system failure

### Optimization

- Designed for performance and spare parts optimization.
- Operates on models developed in field data or fault tree analysis
- Performance optimization determines best set of components or modification to upgrade.
- Spare parts optimization determines best inventory allocation

**Spare Parts Optimization  
Availability vs. Budget**



## Contact Us

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## Key Benefits

### Basic Modeling Features

- Maintenance record analysis including scheduled and unscheduled downtime
- Fault tree analysis for repairable and non-repairable systems.
- Creation of baseline models for reliability or spares optimization
- Distributions for failure rates and downtimes

### Advanced Modeling Features

- Sensitivity and uncertainty analysis
- Simultaneous analysis for interrelated fault trees
- Definition of user-defined metrics for evaluation
- Use of alternative time units in analysis (i.e., hours, miles, etc)
- Multi-objective reliability and spares optimization on single or multiple fault trees

**Contributors to Unavailability**

