

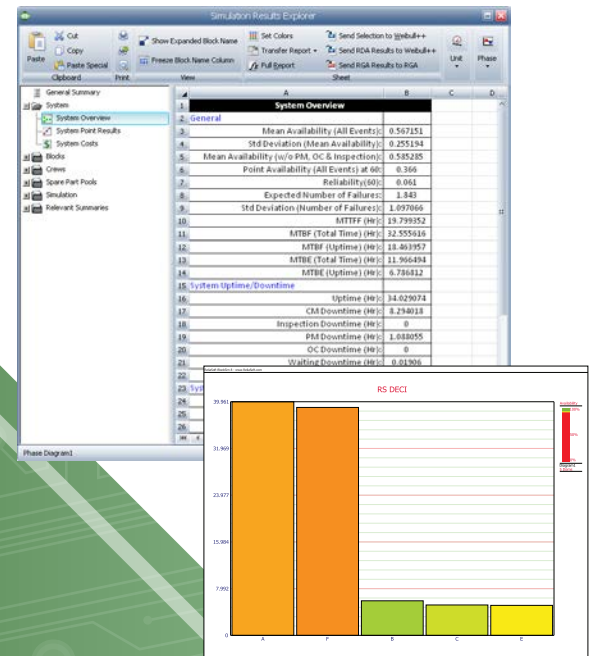
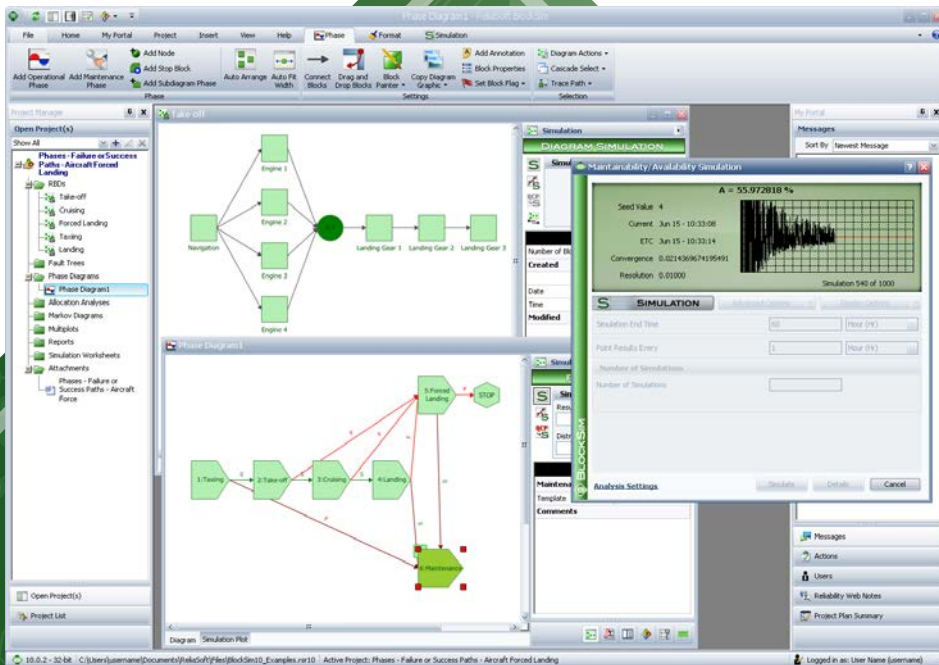
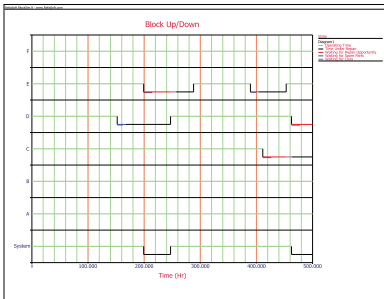
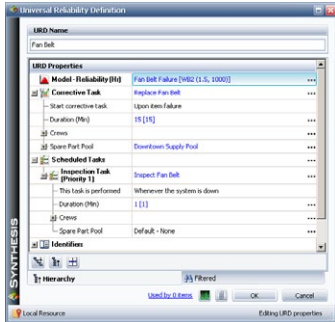
# BLOCKSIM<sup>®</sup>

The ultimate system visualization and analysis tool™

*ReliaSoft's BlockSim provides a comprehensive and flexible platform to model systems and processes using both reliability block diagram (RBD) and fault tree analysis (FTA) approaches. An extensive array of RBD configurations and FTA gates and events are supported, including advanced capabilities to model complex configurations, load sharing, standby redundancy, phases, duty cycles and more!*

*Use the system models to perform reliability, maintainability, availability, reliability optimization, throughput, resource allocation, life cycle cost and other analyses.*

*BlockSim is part of the Synthesis Platform<sup>®</sup>.*



<http://BlockSim.ReliaSoft.com>

## SOFTWARE HIGHLIGHTS - RELIASOFT'S BLOCKSIM

### Reliability Block Diagrams (RBDs)

- Series, Parallel and Complex
- k-out-of-n
- Standby
- Load Sharing
- Subdiagrams
- Multi Blocks and Mirrored Blocks

### Fault Trees

- AND and OR Gates
- Voting Gates (k-out-of-n)
- Inhibit Gates
- NOT, NAND and NOR Gates
- Standby Configurations Using:
  - Standby Gates
  - Priority AND Gates
  - Sequence Enforcing Gates
- Load Sharing Gates
- Subdiagrams

### Analytical Diagrams

- Exact System Reliability Equation
- Minimal Cut Sets
- Metrics:
  - Reliability and Probability of Failure
  - Conditional Reliability
  - Conditional Probability of Failure
  - Reliable Life (aka Warranty Time)
  - BX% Life
  - Mean Life
  - Failure Rate
- Plots:
  - Reliability vs. Time
  - Unreliability vs. Time
  - pdf
  - Failure Rate vs. Time
  - Reliability Importance Plots

### Simulation Diagrams

- Duty Cycles
- Maintenance Durations
- Restoration Factors
- Direct & Indirect Maintenance Costs
- Spare Parts Availability
- Maintenance Crew Logistics
- State Change Triggers
- Batch Simulation
- Metrics:
  - Mean and Point Availability
  - Reliability and Probability of Failure
  - Mean Time to First Failure
- Plots (for System and/or Block):
  - Point Reliability/Availability
  - Mean Availability
  - Costs
  - Up/Down Timeline
  - Block or System Downtime
  - Expected Failures/Downing Events
  - Criticality Metrics (e.g., RS FCI, etc.)
  - Block Bubble Plot
  - Crew and Spare Part Metrics
- Throughput Analysis
  - Excess Capacity and Backlog

### Phase Diagrams

- Maintenance Phases
- Node and Stop Blocks
- Varying Throughput

### Markov Diagrams

- (if supported by your license)
- Discrete
  - Continuous

### System Improvement Tools

- Allocation Analysis
- Optimum Replacement
- FRED Reports
- Overlay Plots (aka Multi-Plots)
- Synthesis Workbooks (spreadsheet and word processing modules combined)

### Centralized Data Storage

- Standard Repository
- Microsoft SQL Server® and Oracle®
- Simultaneous Access by Multiple Users
- Shared Analysis Settings and Data
- Flexible User Access Levels

### Integration

Integration with all other Synthesis Platform applications, including:

- Publish *models* based on diagram analyses and create *metrics* to track and display KPIs
- Use models created from analyses performed in other Synthesis applications

### Multiple Languages Supported

For details, please visit:

<http://www.ReliaSoft.com/languages>

### Available Services

- Detailed User Documentation
- Practical Example Files
- Theoretical eTextbook
- Step-by-Step Example Guide
- Training for Theory + Software
- Professional Consulting Services

## Real Power for Real Applications

BlockSim provides an extensive array of tools to help you model and analyze systems and/or processes. Some of the applications and benefits for using BlockSim include:

- Identify critical components (or failure modes) and determine the most effective ways to improve system performance through design improvements and/or maintenance planning.
- Use simulation to obtain estimated performance metrics that can facilitate decision-making in a variety of areas, such as scheduling planned maintenance, planning for spares, identifying bottlenecks in production throughput and estimating life cycle costs.
- Identify vulnerabilities in a system and determine the most effective ways to reduce the risk.

## Why Upgrade to Version 10? (for details, visit <http://BlockSim.ReliaSoft.com/version10.htm>)

- Major upgrades to the Synthesis Platform®, such as an integrated Project Planner with expanded actions tracking, automated watches and alerts, easier to find and filter analyses, batch properties editor for managing resources, better integration with Active Directory® for user account management, and the option to implement a Synthesis Enterprise Portal website.
- Discrete and continuous Markov diagrams (if supported by your license), a tool to calculate the optimum inspection interval for a group of components and the ability to set on condition tasks to trigger preventive maintenance even if the item is failed.
- New drag and drop features for building diagrams, universal diagram skins, curved line connectors, set block order for simulation results and FMRA integration with FRED reports, allocation analyses and optimum replacement.