

# INTEGRATED APPLICATIONS

**SATURN is an enterprise business management system that integrates multiple corporate applications. SATURN facilitates improved decisions and helps analyze corporate and functional risks, revenues, costs, and profits for a portfolio of plants, trades, and other assets.**

## Market Simulation

- Power, Fuels, EAs, Weather, IR, FX, Other
- Spot & Forward, Volatility Term Structure
- GBM, MR, MRJD, AR, ARJD, Indexed, Hybrid
- All In and Basis, Hourly Profiles
- Multivariate Spot & Forward Correlation Factors

## Generation Optimization

- Thermal, Storage, Renewable
- Unit Commitment and Economic Dispatch
- Ancillary Services, Emissions, Start Costs
- Ramp Rates, Min Run/Down Times, Outages
- Limits (Emission, Cycles, On Hours, Other)

## Parameters Estimation

- Historic Prices, Recent Market Quotes
- Historic & Implied Volatility, Uncertainty
- Volatility Term Structures and Proxy Markets
- Decay Factors, Simple and EWMA Estimation
- MRR, Jumps, Hourly Profiles, Correlations

## Load Analysis

- Electric and Gas, Load Types (Class, Group)
- Relationship (Hour, Day, Weather, Groups)
- Regression Analysis ( $R^2$ , MAPE, SE, MAD)
- Capacity and REC Requirements
- Fixed and Indexed Costing and Pricing

## Trade Capture

- Standard Agreements, Contracts, Templates
- Confirmation (Status, Alerts), Limits
- Payment, Accounting, Netting, Margins
- Forward/Future, Call/Put, Strangle/Straddle
- Spread, Swap, Exotics, Structured Trades

## Trade Valuation

- Power, Fuels, EAs, Load, Gas Storage
- Weather, IR, FX, Insurance, Credit
- Transmission, Transportation, Other
- MTM, Greeks, VAR (Parametric, Simulation)
- Hedge Analysis/Modification, Positions

## Credit Management

- Credit Rating, Rating Transition Matrix
- Default Probability, Loss Given Default, MAC
- A/P, A/R, Margins, Controls, Limits, Netting
- Counterparty, Contract, Exposure, Collateral
- Current and Potential Future Exposure

## Financial Analysis

- KPIs, Targets, Budgets, P&L, Key Ratios
- Income Statement, Balance Sheet
- Taxes, Depreciation, Amortization, Dividend
- Margin, EBIT, EBITDA, Net Income, EPS
- FFO, FCF, Net Cash, ROI, ROE, SVA

## Business Intelligence

- Markets (Spot, Forward, Price, Vol, MRR)
- Weather (Temp, THI, DD, Wind, Rain, Snow)
- Generation (Production, Cap Factors, On Hours)
- Outages (FOR, EFOR, Duration, Distribution)
- Value, Trend, Distribution, Correlations, Other

## Market Integration

- ISOs, RTOs, Pipelines, Exchanges, Brokers
- Generation, Loads, Prices, Weather, Credit
- Scheduling, Nomination, Settlement, Clearing
- Confirmation, Reconciliation, Dispute Resolution
- Corporate Databases, Web Scrapping, Other

## Risk Management

- Cash Flow At Risk (FFO, Net Cash, FCF)
- Earning At Risk (EBIT, Net Income, Other)
- Credit At Risk (Expected/Unexpected Loss)
- VAR and MTM (Realized/Unrealized Gains)
- Risk Tolerance and Capital Allocation

## Portfolio Management

- Existing & Potential Portfolio Risk & Return
- Risk/Return Positions and Tradeoffs
- Efficient Frontier Portfolio Optimization
- Decision Analysis and Support
- Sensitivity & Scenario Analysis, Stress Test

**Recipient of Gartner's Prestigious  
"2009 Cool Vendor" Award**

## DIFFERENTIATING FEATURES

**SATURN offers an unprecedented enterprise-wide integrated ETRM system (front, mid, back office) with decision support capabilities and additional unique tools that offer solutions to key business functions. It helps users realise significant benefits and gain unique and sustainable competitive advantages.**

### Advanced Analytics

- Optimized Generation Analysis
- Unparalleled Operating Limits Optimization
- Multivariate Forward/Spot Stochastic Simulation
- Flexible Parameters Estimation
- Rigorous Load Modeling
- Efficient Frontier Portfolio Optimization

### Unparalleled Performance

- Modern 64-bit Architecture
- Multi-Threaded, Multi-Core
- Grid Computing, Parallel Processing
- J2EE, AJAX, ORACLE
- N-Tier (UI, Calculations, Database)
- Dynamic Hardware Configuration

### Modular Architecture

- Modules, ETRM, or Fully Integrated Framework
- Multi Commodity (Power, Fuels, EA, Other)
- Generation/Trades/Loads/Weather
- Internal Hardware, External Hosting, ASP Setup
- Comprehensive Vertical & Horizontal Scalability
- Regional/National/Global Configuration

### Seamless Integration

- Simulation/Optimization/Valuation
- Multi User/Group/Geography
- Short/Mid/Long Term
- Data/Analysis/Reporting/Presentation
- Productivity Tools (EXCEL, PowerPoint)
- Web Tools (Google Maps, Other)

### Extensive Reporting

- Markets, Generation, Trades, Position, Financial
- Extensive Filtering, Aggregation, & Drill-Downs
- Different Granularities, Extensive Statistics
- Flexible Price and Volumetric Measure Units
- Datagrids, Charts, Dashboards, EXCEL, Other
- Configurable Reporting and Presentation

### Intuitive Interface

- Standardized Web Based Interface
- Data Validation, On-Line Help, FAQs
- Configurable Display Setup and Templates
- Customized Access Setup and Administration
- Plug and Play Configuration, Bookmarks
- Intuitive Layout, Navigation, and Actions

### Enterprise Services

- Users Forum, Newsletters, News Feeds
- Messaging and Email Notification
- Corporate Collaboration & Database
- Archiving and Document Management
- Full Data Changes Auditing
- Usage Tracking and Analysis

### Enterprise Mobility

- Access Anytime Anywhere
- Service Oriented Architecture
- Secure Web Based Interface
- Authentication & Authorization
- Data Security and Data Integrity
- Messaging and Email Notification


### Benefits




### Testimonials

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SATURN enables enterprise risk management with an unprecedented mix of analytics, ease, and speed.  
*Steven B. Oster, Director, Quantitative Analysis*
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SATURN has performed 20 times faster than our tools. It is an easy-to-use next generation system.  
*Richard Cook, Generation Planning Manager*
- 

... broad and deep functionality ... emphasis on integration and data mining ... somewhat unique.  
*Gary M. Vasey, Ph.D., Vice President, Europe*
- 

... offers layer upon layer of sophisticated portfolio management functionality we've not yet seen.  
*John Sodergreen, Editor-in-Chief*