



NextGen Performance[®]

Reliability, Energy, and Process Modelling Modelling for NextGen Performance



Do you need to improve performance and profits? At KBC, we combine the following elements to tailor the best solution for each client's specific needs:

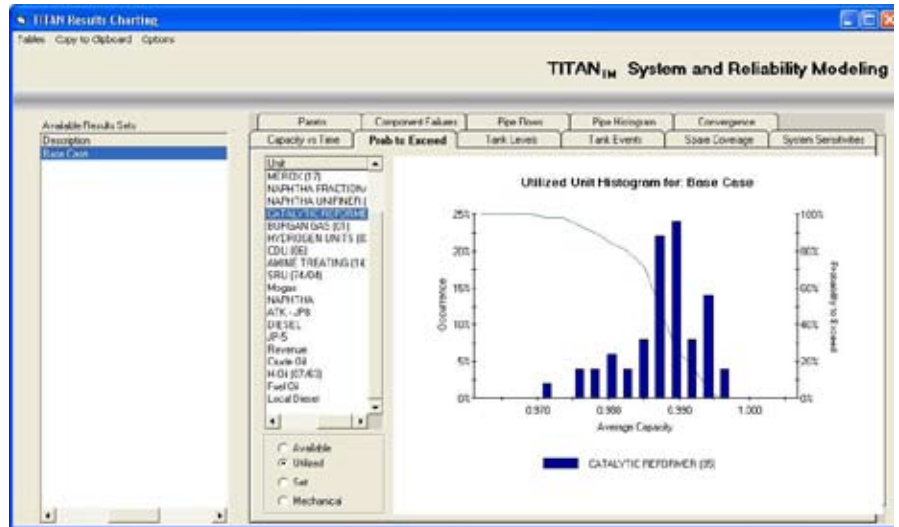
- Cutting-edge tools and technologies
- Leading practices
- Hands-on expertise in engineering, design, operations and maintenance
- A cross-functional team approach to improvement planning for your situation

THE RIGHT MODEL, THE RIGHT DETAIL

Systems with intermediate product storage, reduced rate failures, standby redundancy, special operating rules, and age dependent behaviour rapidly become too complex for even the most sophisticated computers. This is where simulation modelling shows its true power.

In partnership with The Fidelis Group, KBC analyses system and reliability models that can incorporate information anywhere in the range from high-level facility studies to exceedingly detailed equipment component interactions. Models allow for multiple states, and they can include profitability targets and external influences, such as seasonal and feed material changes. This programme provides the ability to determine best availability across the operating spectrum. The analysis produces highly accurate predictions of future system performance, simplifies asset procurement and spare parts management, and improves overall system reliability.

An integrated study can be created by combining energy and process information. Coordination of KBC offerings

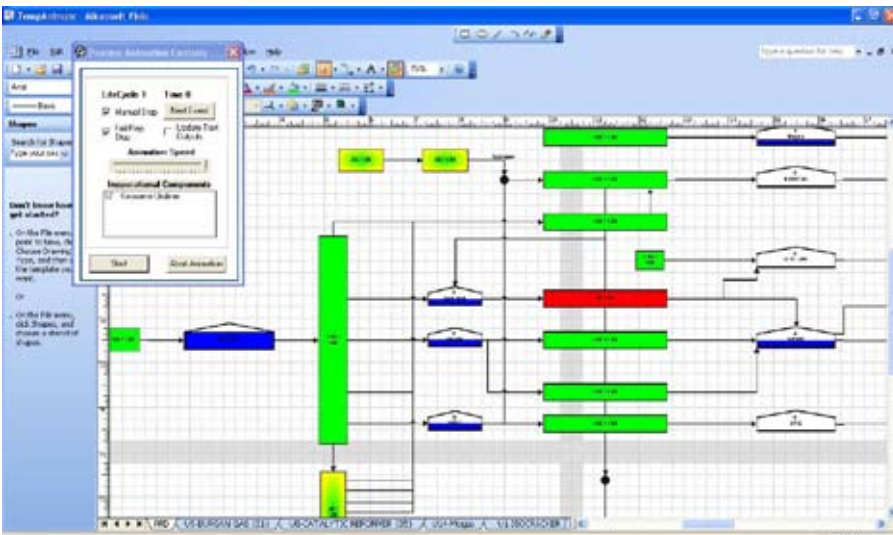


TITAN System and Reliability Modelling - Probability

through our world-renowned suite of process software such as Petro-SIM and ProSteam allows KBC to analyse fully integrated operational and mechanical client needs. Our reliability modelling supports clients through all phases of facility development – from early visualisation and screening of alternative plant layouts to equipment selection and spares optimisation.

LOWERING OPERATIONAL COSTS – THE NAME OF THE GAME

Through our joint expertise, KBC and The Fidelis Group can support clients in analysing and identifying plant system and reliability bottlenecks, which provides an enhanced response to meet today's market demands by increasing availability and reducing operating and maintenance costs.



TITAN - Animated Flowsheet

(Continued)

The systematic KBC approach to reliability improvement through our FULCRUM™ suite and TOP™ turnaround/shutdown methodology is fully supported by the capability to provide detailed modelling of unit, equipment, and spare parts.

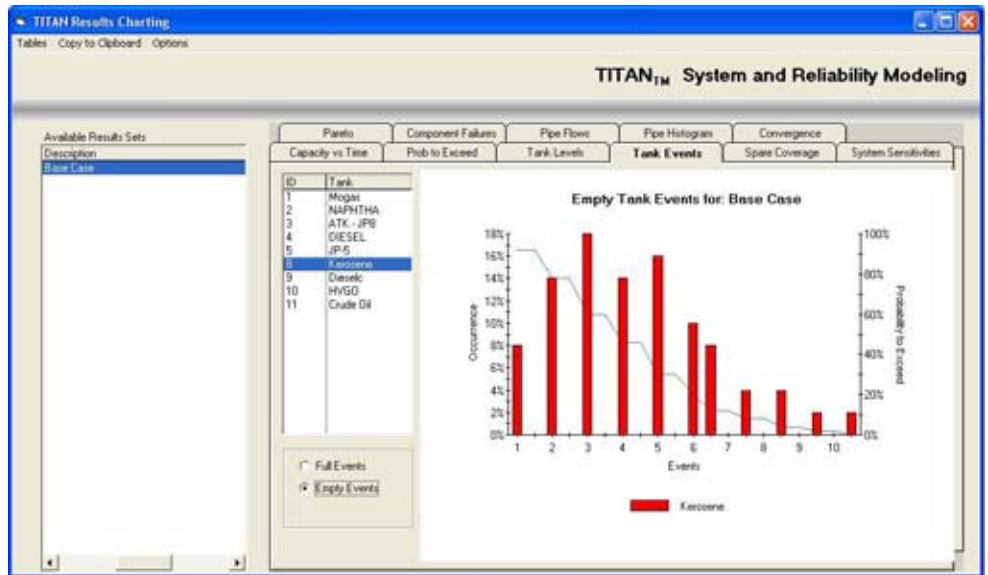
Systems and reliability modelling supports optimal decision making for complex situations such as:

- In-line Spares (Redundancy)
- Quality of Component
- Instrumentation Needs
- Storage Tank Sizing
- Warehouse Spares (Quantity and Location)
- Scheduled Maintenance Optimisation
- Operating and Maintenance Practices/Policies
- Unit Processing Capabilities
- Integration of Multiple Facilities

The KBC suite of tools allows “what if” scenarios to be performed quickly and effectively so that options can be tested and decisions justified prior to implementation.

CLEAR RESULTS

The partnership between KBC and The Fidelis Group ensures best available systems design, operational, energy, maintenance, and reliability analysis. Results from the system and reliability analysis are intuitively presented through a simple yet extremely powerful visualisation of system conditions during the simulation. Modelling results are intuitive



TITAN System and Reliability Modelling - Tank Events

and include detailed sensitivity, probability of achieving performance goals, and event analysis.

THE BENEFITS

NextGen Performance requires a fundamentally reliable operation. By applying specialised KBC knowledge and industry-leading tools in Reliability, Availability, and Maintenance, our hydrocarbon refining customers show an average increase in profitability through reduced costs and increased plant availability of 25-40¢ per bbl (or USD\$1.88-\$3.00 per tonne). Clients in other processing industries realise equivalent results through reduced direct maintenance cost and increased availability.

Your Company + KBC Produces NextGen Performance[®]

We collaborate with our clients to create unique solutions to their specific challenges. Some of these challenges may include:



NextGen Performance[®]

Strategic Challenges

- Effective Business Strategy/Decisions
- Increased Return on Investments
- Enhanced Returns on Acquisitions/Divestitures
- Reduced Risk (Strategic, Capital, Other)

Market Challenges

- Enhanced Yields
- Effective Responses to Crude/Feedstock and Product Markets
- Improved Financial Performance
- Market Risk Management

Environmental Challenges

- Reduced Emissions
- Enhanced Compliance

Operating Challenges

- Improved Organisational Effectiveness
- Reduced Maintenance Costs
- Improved Energy Efficiency
- Behaviour-based Reliability/Performance
- Improved Safety Performance
- Operational Risk Management

For more information on how KBC can help you achieve Next Generation Performance, please visit www.kbcat.com, contact us at answers@kbcat.com, or call AMERICAS +1 281 293 8200 • EMEA +44 1932 242424 • ASIA +65 6735 5488