

K-Spice®

The Next Generation Dynamic Process Simulation



KONGSBERG



K-Spice is the dynamic process simulation solution designed for detailed dynamic simulation of oil and gas processes and control systems throughout the whole process lifecycle. The simulator combines the best and improved features for system management, thermodynamics, numerical solvers and a flexible and intuitive graphical user interface.

Lifecycle simulation concept

KONGSBERG has been the leader in providing high fidelity dynamic simulators for process, instrumentation and control engineering for many years.

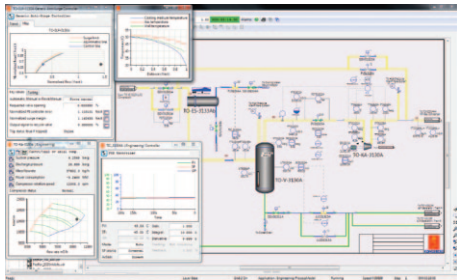
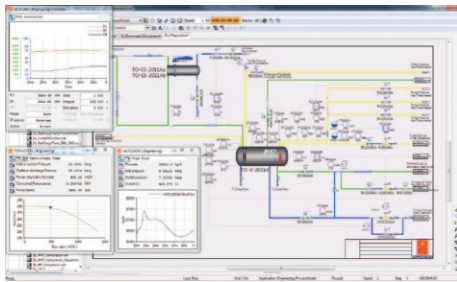
KONGSBERG'S lifecycle simulation concept is a proven and powerful concept that utilizes the same dynamic process model throughout the different phases of field development. Dynamic simulation helps reduce costs and improve efficiency in all phases of a project.

Dynamic simulation should be used in a field development project for process design validation, together with control logic checkout and verification.

Dynamic simulation should also be used to prepare operators for plant startup and optimal plant operation. By verifying and testing the process and control scheme, plant startup will be smoother and operating costs lower.

Process design verification

- Verify equipment capacity and design
- Study process dynamics
- Establish control strategies
- Test shutdown philosophies Create/ test sequence logic and operating procedures Support HAZOP studies
- Operator training
- Plant familiarization
- Operator graphics familiarization
- Control system familiarization
- Steady-state operations
- Upset condition operations
- Process and control deterioration
- Start-up and shut-down
- Testing safety procedures
- Testing operating procedures
- Field operator communications
- Check-out and verification of control logic
- Controller configuration and tuning
- Alarm settings
- Logic and sequence testing
- ESD/PSD/F&G verification
- Operator graphics development and testing
- Optimize plant operation
- Optimization studies
- De-bottlenecking studies
- Retrofit studies
- Control system upgrades
- Operator graphics upgrades
- Controller tuning



Project feasibility / Concept selection	Pre-engineering / Detailed engineering	Commissioning/ Production start-up	Online operations/ Maintenance support/ Process optimisation	Modifications/ Plant retrofits
Conceptual design				
Feed studies				
Verificaton of control philosophy				
Verification of equipment sizing				
		Flow assurance studies		
		Support during plant commisioning		
		Safety analysis		
		Verification of operational procedures		
		Control system verification		
Precommissioning checks				
Confirm startup and shut down procedures				
		Operator Training		
		Post startup modification and verification		
		Analysis of operational problems		
		Plant de-bottlenecking and optimisation		
		Safety checks		
		Production optimisation		

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