



WINNER

1997 R&D 100 Awards Winner

Falcon: Breakthrough Software for Simulating Oil Reservoirs

Features

- Enables high-accuracy modeling of large, economically important oil fields by using a novel linear-equation solver
- First-ever fully implicit reservoir simulator scalable to thousands of processors
- First oil reservoir simulator to harness the power of high-end parallel computer technologies for industrial use
- Allows quantitative assessment of predictive variability resulting from inconclusive geological data
- Enables best- and worst-case economic analyses of oil and gas fields
- Calculates "what if" operational scenarios for reservoirs

Applications

- High-accuracy modeling of large fields with complex physics
- Decision-making in formulating oil recovery strategies and schedules
- Planning of facilities at production sites
- Appraising property for making leasing decisions for oil fields
- Developing long-term economic strategies for oil recovery
- Simulating underground pollutant dispersion

Benefits

- Enables, for the first time, high-speed, fully implicit simulations of complex fields
- More accurate production estimates for large oil fields that produce over half of the world's oil
- Faster turnaround time for predictive reservoir studies
- Better risk assessment and estimation of uncertainties from reservoir simulation predictions
- One hundred times faster than other simulators
- Improved yield from primary and secondary oil and gas recovery operations
- Improved oil field production
- Better manufacturing capabilities from improved industrial modeling and simulation