

Kinetix

Reservoir-centric stimulation-to-production software

APPLICATIONS

- Conventional and unconventional reservoirs
- Multistage and single-stage completion design
- Initial stimulation or refracturing
- Production optimization at the well, pad, and asset level

BENEFITS

- Maximizes production performance, estimated ultimate recovery (EUR), and ROI by optimizing stimulation designs using multidisciplinary workflows
- Improves stage performance by guiding well design evolution from geometrically spaced perforations to strategic staging and perforation selection
- Integrates multiple complex data sources for high decision quality
- Automates parallel sensitivity analysis of hundreds of design scenarios in the cloud

FEATURES

- Integrated, repeatable workflow
- Capture of 3D geological and geomechanical characterization
- Fit-for-purpose high-fidelity numerical models for planar and nonplanar fractures
- Multilevel stress shadow (within stages and between wells) in 2D and 3D for modeling sequential fracturing execution
- High-resolution fracture hydrodynamics with kinetics model
- Multilayer discrete fracture network
- Coupling to the VISAGE* finite-element geomechanics simulator for 3D simulation
- Structured and unstructured gridding with the INTERSECT* high-resolution reservoir simulator
- Production forecasting and calibration
- Sensitivity framework powered by cloud computing

Kinetix* reservoir-centric stimulation-to-production software is the only hydraulic fracturing design software with a seamless, comprehensive seismic-to-simulation workflow for multilevel optimization of stimulation designs and production from oil, gas, and condensate reserves. This software integrates geophysics, geology, petrophysics, completion engineering, reservoir engineering, and geomechanics in a repeatable workflow that ensures data integrity and high decision quality. With these multiple capabilities, users of this plug-in for the Petrel* E&P software platform can maximize production performance, EUR, and ROI in any reservoir, from conventional to unconventional tight sands and shale.

Multiple models with explicit reservoir gridding for hydraulic fracture simulation

Kinetix software accesses multiple models for the best fit between the science and the reservoir:

- **Unconventional fracture model**—The UFM* unconventional fracture model is a fully coupled numerical modeling solution for simulating complex fracture geometries while accounting for reservoir heterogeneity, stress anisotropy, and 3D stress-shadow effects. It efficiently models hydraulic fracture interactions with multilayer natural fractures as it solves for fracture propagation mechanics and proppant transport.
- **Fine-scale fracture hydrodynamics and in situ kinetics model**—Advanced modeling enables simulation of heterogeneous proppant placement and mixtures of multiple fracturing materials including different proppants, fluids, and fibers.
- **Full 3D design simulator model**—Powered by high-performance engines, the Planar3D* fracturing design simulator based on a planar 3D model is a full 3D model with stress-shadow capability that creates the most accurate planar fracture simulations for formations with complex stress profiles.

High-resolution simulation grids are automatically generated by explicitly gridding complex fracture networks while capturing the fracture dimensions and conductivities and also tracking the propped and unpropped regions in the networks. The high resolution is paired with new computational efficiency: Resources permitting, multiple simulations can be spawned for the UFM model and Planar3D simulator in batch mode on a local machine or in the cloud.



Kinetix software helps operators optimize well, pad, and field productivity by integrating multiple data sources and reservoir models to rapidly and accurately simulate fracture propagation, proppant transport, and fracture network development.

*Mark of Schlumberger; the INTERSECT simulator is a joint product collaboration of Schlumberger, Chevron, and Total
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