

BUILDER

Pre-Processor: Simulation Model Building Tool

Benefits

- User-friendly advanced process wizards and workflows
- Quickly organize complex data into simulation input format
- Increase data integration and workflow management using Builder and Results
- Automatically quality check and convert data during imports
- Easily navigate multi-million grid cell models

New Features

- Improved memory, load time and performance
- Increase productivity with improved 3D visualization capabilities
- Quickly extend or contract planar fractures to the edge when fractures overlap
- Save time configuring constraints while history matching models

Builder simplifies the creation of simulation models by providing a framework for data integration and workflow management between IMEX, GEM, STARS and external data sources.

- Easily build complex simulation models with advanced process wizards
- Streamline data integration and workflow management with Results™
- Import data from third-party reservoir simulators, geological or hydraulic fracture modelling software

Reservoir engineers will achieve immediate time savings by effectively navigating the often complex process of preparing reservoir simulation models.

Model Building

Builder™ has an interactive, intuitive and easy-to-use interface that enables users to quickly and efficiently incorporate all required data to build a simulation model. The built-in wizards and workflows organize data the way an engineer expects and allows users to remain focused on reservoir engineering, rather than keyword syntax.

Geomodelling and Geostatistics

- Build reservoir structures using the contour map creation tool
- Create 3D geomodels using contour maps, zone thickness maps, and more
- Upscale geomodels for flow simulation
- Use well logs and core data with the geostatistical module for property distribution calculations

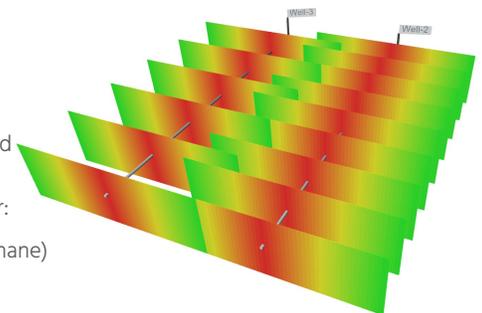
Productivity Improvement Tools

- Easily import or create geological models, reservoir property distributions, PVT models, injection/production history, well trajectories, well completions, and hydraulic fracture data
- Utilize the grid-editing tool to perform: refinements, sub-model extraction, upscaling, grid splitting, and more
- Use correlations to generate data for relative permeability and PVT
- Convert datasets from IMEX™ to STARS™ or GEM™ to model more complex recovery processes
- Define and edit properties for any sector or region of a reservoir
- Easily select properties and data for output to Results
- Intuitive well planning and field development tools for pattern-based or horizontal well drilling, defining group and cyclic well controls, and more

Process Wizards

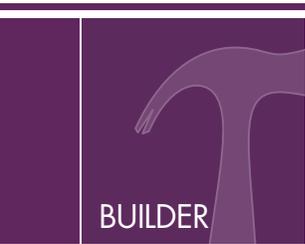
Builder's guided task-based advanced process wizards helps users to build complex simulation models, enabling fast and efficient comparisons of different recovery processes. Builder has easy step-by-step data input for:

- Unconventional Reservoirs (shale gas, hydraulic fractures & coal bed methane)
- Chemical EOR (foamy oil, ASP injection, low salinity waterflooding)
- Geomodelling and Geostatistics
- In Situ Combustion
- Asphaltene Precipitation
- Fines Migration



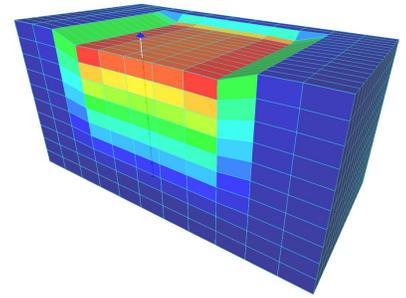
Analyze the presence and extent of inter-well communication with an option to connect overlapping hydraulic fractures.





Hydraulic Fracture

- Create different fracture representations including simple bi-wings and complex networks
- Import third-party fracture design and parameter data for better fracture characterization, history matching and forecasting
- Quickly add or modify fracture properties for multiple stages or wells
- Easily adjust values of fracture permeability and non-Darcy flow coefficients to accurately capture effects occurring in the field
- Vary propped/unpropped hydraulic and natural fractures' half-lengths, conductivities and more.
- Save fracture templates to easily apply identical fracture properties to multiple wells



Model the geomechanical phenomena observed in the field with one- and two-way coupling between Builder, IMEX and the geomechanics module.

Chemical Enhanced Oil Recovery (cEOR)

- Process wizard inputs include reduction in residual oil with surfactants and alkali, adsorption of injected chemicals, complex non-Newtonian polymers, and more.
- Implement relative permeability interpolation based on the composition of certain components
- Reactions for In Situ foam generation or degradation help capture the true physics of the foam process
- Match lab data more efficiently with the foam wizard for GEM and STARS
- Confidently forecast production/recovery factor by configuring full-field or hybrid Low Salinity Waterflood (LSW) models
- Easy step-by-step data input for LSW
- Utilize the LSW process wizard to set up geochemistry reactions

Combustion

- Easily define In Situ Combustion reactions and components
- Select from three different customized reactions and components for Low-Temperature Oxidization (LTO) and High-Temperature Oxidization (HTO) based In Situ Combustion reactions

Advanced Wellbore Modelling

- Wizards to import and edit well trajectories, and production and injection history
- Convert source-sink wells into FlexWell
- Well control options include pressures, rates, layer-specific dynamic layer and monitoring fluid
- Import iSegWell well path information based on trajectories
- Trajectory smoothing for removal of unrealistic 'kinks' in trajectories
- Convert trajectory and perforation information for one or more wells into iSegWell keywords
- Import third-party fracture simulation data for better fracture characterization, history matching and forecasting

Geomechanics

- Several different geomechanical models available to model stress-strain relationship
- Easy data input to set-up geomechanics module
- Full control over type of coupling and other geomechanical numerical parameters
- Select important geomechanical properties to output to Results



Contact

For more information
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R&D Investment

CMG reinvests 20%
annual revenue back into R&D,
to further innovation and drive
technology forward



Superior Software

CMG delivers easy to use
software that provides the
most accurate results



Dedicated Support

Experienced technical sales &
support personnel, deliver high-
quality, timely and personalized
customer support



Relevant Training

CMG's industry renowned
reservoir software training
provides the skills to improve
productivity and efficiency