

ENABLETM

TEMPESTTM

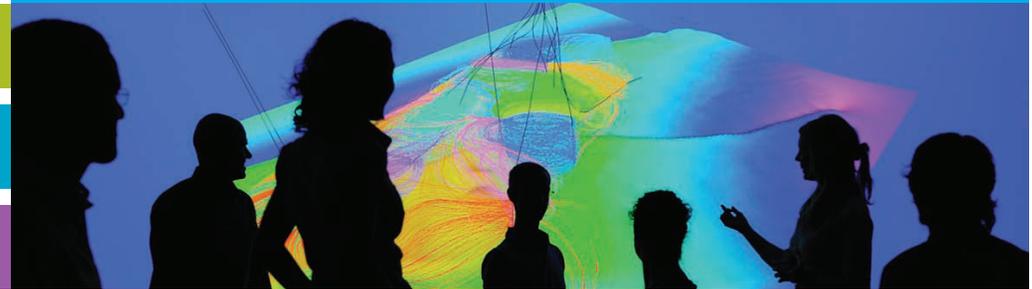
RMSTM

roxar

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From Exploration to Production

Understanding Your Reservoir Better



Making the Right Reservoir Management Decisions

We all know the wide variety of challenges the hydrocarbon industry is currently facing. Oil & gas demand is outstripping supply and reserve replacement is lagging behind production rates, as fields become smaller but more complex. Companies are under pressure like never before to make the right exploration, development and production decisions.

The success of these decisions depends largely on our ability to characterise and understand reservoirs, and on how effectively we can reduce the field development planning cycle time.

Roxar Software Solutions, part of Emerson Process Management, is a leading provider of innovative technologies and professional services to the upstream oil and gas industry. We enable our customers to better understand their reservoirs and realize the full potential of their assets, be they reserves or people.

Roxar solutions are designed to create informed field development and reservoir management decisions, such as what depletion strategy to use, where to drill wells, and how to operate those wells. We deliver high quality technology and detailed reservoir understanding that help operators increase oil and gas recovery, with accelerated production from well-managed fields.

Our sophisticated field modelling and management technologies provide lower capital and operating costs through better and more accurate decisions on a continuous basis.



Mitigating Risk and Quantifying Uncertainties

There is one thing that today's E&P operator can be certain about, whether it be bid valuations, reserves estimates, new field development plans, or production-based decisions: there will always be an element of risk and uncertainty in their decisions. However, such risks can be mitigated and uncertainty better quantified by harnessing and leveraging the data and knowledge available.

Through best in class Roxar software, support and training solutions which span reservoir modelling, reservoir management and production optimisation, operators can:

- Make better use of their data to improve decision-making
- Understand and manage oil and gas reservoirs
- Assess and mitigate risks more effectively
- Implement best practice workflows
- Raise knowledge and understanding across asset teams
- Increase staff productivity at all experience levels

The result is minimised risk and maximum reservoir performance.

Helping Companies Throughout The Reservoir Lifecycle

The Roxar Software Solutions portfolio provides leading edge solutions throughout the entire reservoir lifecycle:

In the exploration phase, the RMS geo-modelling software can assess some of the unknowns in the proposal. The impact of velocity and depth conversion uncertainty on prospect size and shape can be modelled, the range of likely trap volumes can be generated, and the fault seal and streamline modules can assess trap integrity. With RMS and *EnABLE* uncertainty analysis tools, the necessarily simple models available at this stage can still provide an informed ranking of prospects, maximising the chances of success. Roxar is also focused on developing an integrated seismic to production workflow with information that can be extracted directly from seismic data into the 3D geological model, giving better models at very early stages.

During the appraisal and development phases, the Roxar modelling suite is the best choice to help E&P companies build development plans for their oil and gas assets. Roxar helps operators develop their production plans and drilling programs by generating accurate reservoir models, regardless of reservoir type. 3D models provide vital information about hydrocarbons in place and how they can be produced. When drilling begins, Roxar's software integrates real-time drilling data into the geological model in a continuous update cycle, producing a continuously correct model.

Finally, in the production phase, Roxar's simulation and history-matching solutions help monitor and refine field development plans. Real-time data from the field, such as pressure, temperature and flow rates, can be integrated with petrophysical updates to update the model on a day-by-day basis. Quantification of structural and reservoir property uncertainties in real-time keep the 3D model relevant to decision making throughout the field lifecycle.

By combining data from Roxar Flow Measurement instrumentation with predictive models from the Roxar Software Solutions modelling suite, operators can monitor production continuously, remotely control fields, and use the most up to date information when forecasting future reservoir performance. The result is the most comprehensive geotechnical decision-making environment available.

Roxar Software Solutions has a broad software portfolio covering the entire reservoir lifecycle and can boast a number of key industry differentiators. These include:

ENABLE™



History Matching and Uncertainty Quantification

The Roxar *EnABLE* solution history matches numerous geological scenarios to create simulation models that are fully consistent with their underlying geological interpretation (unlike many current 3D modelling workflows). RMS, Tempest and *EnABLE* provide E&P companies with a statistical framework for a rapid understanding of production behaviour and the creation of robust estimates from a shared earth model.

The result is more informed technical and economic decision-making and a better quantification of uncertainty.

TEMPEST™



Reservoir Simulation

The Tempest reservoir simulator provides an extensive, feature-rich solution for full-field reservoir simulation which is accessible for the entire subsurface community rather than only a few, highly specialist reservoir engineers. Extensive parallel processing capabilities allow users to conduct ever faster simulation runs in higher levels of detail. The greater accuracy this generates in predictions of field performances enables better targeted capital expenditure.

RMS™



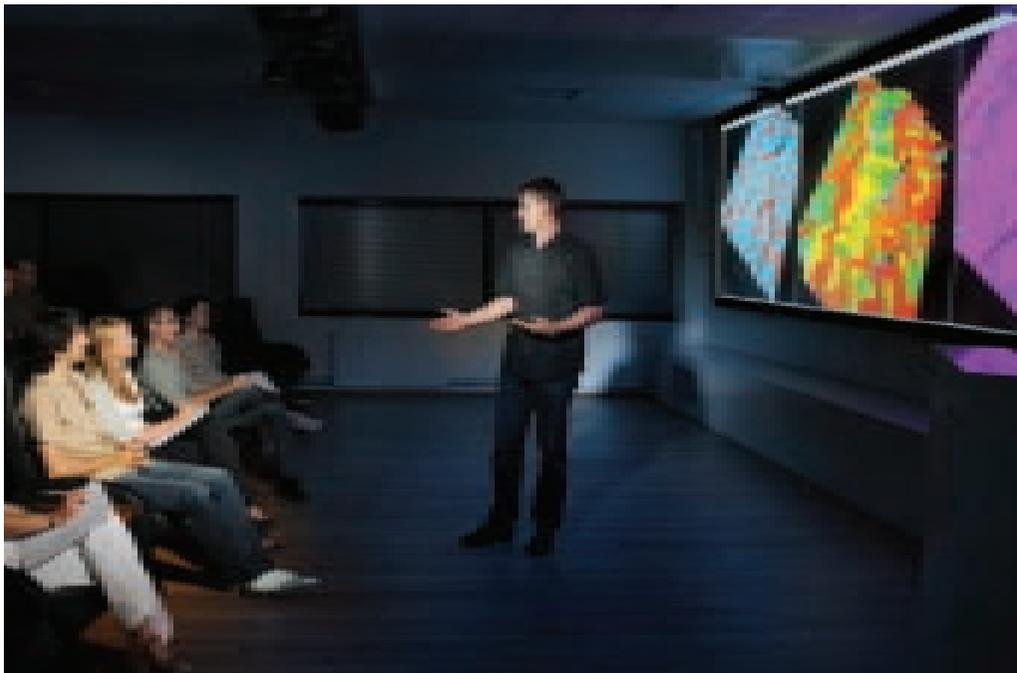
Reservoir Modelling

RMS is our flagship reservoir modelling solution. It includes mapping, modelling, planning and workflow management tools. This integrated modelling platform accelerates the field development planning cycle by allowing multiple disciplines to work together within a shared reservoir model.

Key modelling features include a new user-friendly interface, which dramatically shortens the learning curve and increases personal productivity; structural modelling tools that build the structural framework within weeks rather than months; high quality grids for geo-modelling and simulation; and advanced property modelling tools providing accurate volume calculations.

Training & Consultancy Services

We are committed to ensuring that our customers get the best out of their software investments. To this end, the Roxar Academy has been developed to ensure excellence in training and to help geologists, geophysicists, and reservoir engineers perfect their reservoir modelling techniques. From field development planning using 3D reservoir modelling and uncertainty analysis, to reservoir engineering and simulation, Roxar can provide a team to handle any type of reservoir modelling situation.



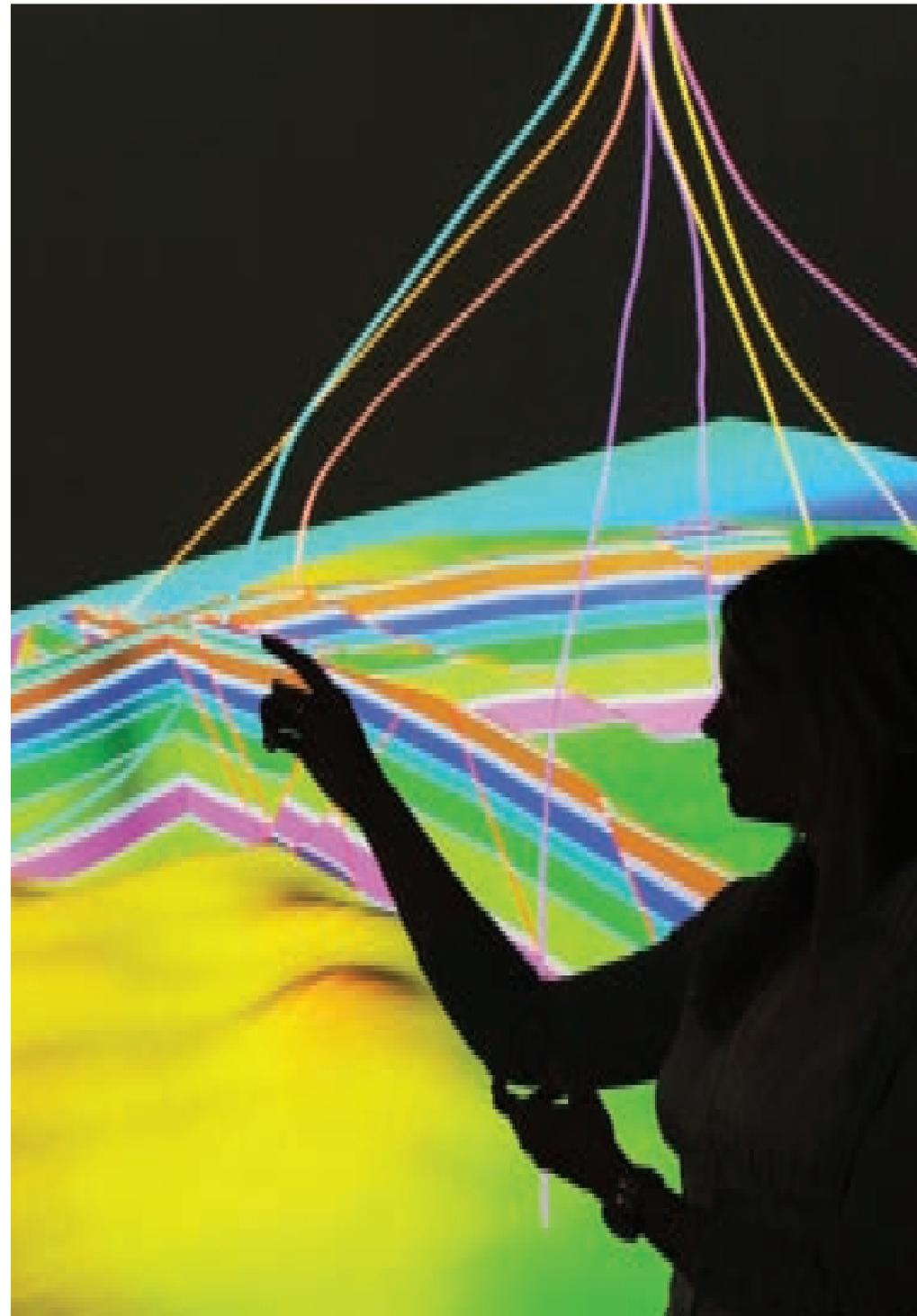
From Exploration to Production

The Right Solutions at the Right Time

Roxar Software Solutions represents a big loop workflow of reservoir management. A workflow that provides the greatest accuracy, the most comprehensive uncertainty assessment, and the best-quantified risk in the geologic model - from seismic acquisition through to simulation and from exploration to production.

Using all the available data, models can be built quickly, easily and accurately and updated in real-time, as new geophysical, geological or production data arrives. Used in conjunction with our geologic modelling and simulation software, our unique history matching and uncertainty modelling technology can identify the key risk factors and quantify uncertainties in reserves and production forecasts.

At a time when the industry is looking for fast, easy-to-use and powerful reservoir management solutions, to generate improved productivity and better decisions, Emerson Process Management's Roxar Software Solutions is providing the right solutions at the right time.



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Make Sure It's Roxar.

The combination of Emerson and Roxar has created the world's first integrated automation solutions company with products spanning from subsea oil and gas reservoirs, to platform and floating production, to transmission, and ultimately through refining and production of goods.

