

DrillPlan

Coherent well planning solution



Optimize your drilling programs with the DrillPlan™ coherent, well-planning solution. Transform your well-engineering and planning workflows and maximize results, with enhanced collaboration on a single common system.

Applications

- One click Drilling program generation
- Well scenario comparison
- Batch Planning
- Team Management and Collaboration
- Project Management
- Activity planning and benchmarking
- Risk management
- Automatic Trajectory Design
- Master survey database
- Advance Casing design
- Casing while drilling
- Cement planning and design
- Upper completion design
- Jar Placement
- BHA design
- Fluids and hydraulics design
- Optimum drilling parameter simulation
- Engineering Sensitivity Analysis
- Advanced Liner Running and Packer setting
- Wellbore stability analysis
- Offset well analysis
- Time estimation and AFE preparation
- Well barrier illustrations
- Dynamic multiphase kick tolerance simulation
- Emission footprint calculation
- Integration with subsurface data – Geomechanics insights
- Automated Engineering analysis extensibility

Key benefits

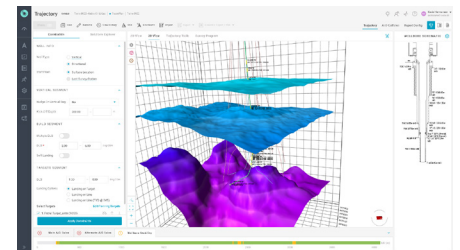
- Creates a common digital work environment that increases your visibility into all projects and enhances collaboration among well planning teams and third-party service providers.
- Improves your planning efficiency to free up more time for engineering innovation by automating repetitive tasks, such as torque and drag, hydraulics, and load case analysis and reporting.
- Delivers better planning consistency and efficiency with themed workflows and templates.
- Facilitates integration of multidisciplinary engineering workflows with subsurface data.
- Leverages your offset well data to help you perform risk evaluation and improve your well plans.
- Ensures a coherent engineering solution by using automated validation engines.
- Enables your team to work concurrently in a single document with the latest review and approved engineering.
- Delivers a coherent plan that is always up to date to all stakeholders via the cloud.
- Enhances your operational forecasting with identification of best composite time and probabilistic analysis of NPT.

How it improves well construction planning

DrillPlan coherent well construction planning solution enables you to maximize the results from your well planning teams by giving them access to all the data and science they need in a single, common system.

It provides the platform for a radical new way of working that gives you quicker and better-quality drilling programs by automating repetitive tasks and validation workflows to ensure your entire plan is coherent. It also includes a circular workflow, which means plans are improved as new data is added and future programs can learn from experience.

As a natively engineered software solution for the Delfi digital platform, the DrillPlan solution provides you easy access to all your well construction projects in a secure, cloud-based ecosystem.



The automated trajectory engineering workflow in the DrillPlan solution enables you to run hundreds of simulations to find the best solution within your drilling, geological, and geomechanical constraints.

Well planning orchestration

The common digital environment of the DrillPlan solution increases your ability to see all projects and well planning workflows to ensure the completeness and quality of your drilling requirements and standards.

The solution features a live activity feed that enables you to stay on top of the latest updates to active projects from all well planning stakeholders, including multidisciplinary teams, and third-party service companies—increasing team productivity and driving planning procedural adherence.

Well engineering and planning on Delfi

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In the DrillPlan solution, your company's planning workflow process is mapped and customized to include all your required stage gates and standards. Themed workflows and templates can then be created to drive your planning efficiency and consistency across the organization, and a built-in digital review streamlines your technical and management approvals.

Automated engineering

With the DrillPlan solution, you access all your engineering tools and data in a common system and integrate your workflows—from trajectory and casing design to fluids and cementing, through to operational activity, planning, and AFE.

Automated design enables you to run hundreds of simulations to find the best solution within your design constraints. Gain insight into your designs by performing multidimensional sensitivity analysis for hydraulics, torque, and drag.

Visualize the engineering results through interactive analytics displays, to easily evaluate hundreds of scenarios to optimize your operational parameters.

Repetitive tasks are automated, giving you more time to focus on new engineering insights, and the latest engineering outputs to your drilling program are automatically loaded. You can track design changes in the solution over the life of the project, so you can see the evolution of your plan, or easily revert to a previous design. The DrillPlan solution enables you to duplicate the master plan within your project to build and compare scenarios and identify the best possible well design. You can copy your basis of design in one click to easily generate similar projects and streamline your well planning process.

Features

- Single, common system for well planning
- Live activity feed
- Automated engineering and task validation
- Customizable templated workflows
- Open and extensible architecture
- Design validation

At every stage of the well planning process, you maintain coherency across all workflows and tasks with a single data source, shared models, and the validation engine.

The DrillPlan solution enables you to view shared contextual information between applications to ensure you use the latest engineering outputs. Whenever changes to the plan are made, over 30 engines are automatically activated—including casing design, well integrity simulations, torque and drag, and hydraulics for drilling and casing operations—to cross-check that your plan is still coherent.

Engineering flags highlight where you need to review detailed engineering outputs via user-friendly dashboards. All of this enables you to instantly see how your design changes affect your entire plan, review, and validate the results. The corporate settings in the DrillPlan solution also define standard operating criteria across all projects, ensuring consistency from well to well.



Multidimensional sensitivity analysis enables you to perform multi-depth engineering analysis throughout the entire hole section. It uses interactive analytics displays with detailed engineering results for hydraulics and torque and drag in the context of your formation pressures and equipment constraints.

Risk management

With the DrillPlan solution, you use your offset knowledge and experience to identify risk and previous NPT, so you can reduce them through engineering or mitigate it through operational recommendations. The solution uses an open architecture to connect to your relevant databases and cross-domain information. The result is lessons learned captured from your offset wells and relevant data for replanning and implementing your management of change process are always available. Once completed, your risk map is easily transferred into your operational instructions and delivered to your operations teams.

You can enable a safer execution with fully integrated well integrity workflows, with the automated well barrier illustration tool and well control simulation with multi-phased engines optimized for drilling operations.

Activity and cost planning

Offset information is used to run a historical analysis to help you better understand your prior operational performance, conduct probabilistic analysis of NPT incurred on offset wells, identify the best composite time, and improve operational forecasting. This automatically generates the best sequence of operational activities from your most effective offset wells and builds an optimal operational sequence and constraints from your offset experience and engineering specifications.

With the ability to include your standard operating procedures and work instructions for the operations team, you gain improved compliance and HSE performance.

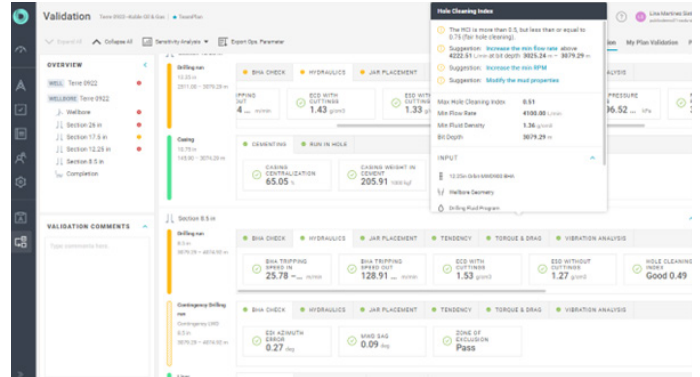
Time and cost management is also improved by using your offset well information in the DrillPlan solution. For example, baseline estimations of your time-depth curve from relevant offset wells can be determined, and you can instantly see the effects of your engineering updates to performance and cost calculations. Service contracts connected to the system enable you to instantly see how design iterations affect project cost. Furthermore, the DrillPlan solution displays cost per activity and distribution across the well life cycle.

Coherent drilling plan delivery

The DrillPlan solution enables the creation of customized templates for your drilling reports.

Smart document management preloads all the latest reviewed and approved engineering and gives your team the ability to work concurrently in a single document, saving hours of administrative work. The latest drilling program is instantly available to you in the cloud, so whether you need to pull up the program during a design review, team briefing, or on the drilling manager's tablet on location, the plan is kept coherent with everyone.

A digital drilling program is then generated for ingestion in the DrillOps™ on-target well delivery solution for safe and efficient execution.



Instantly validate your entire well design every time you make a design change. The DrillPlan solution combines more than 30 engineering calculations running automatically for hydraulics, torque and drag, casing design, well integrity, and more for drilling and casing running operations

Key Applications:

- Offshore and onshore drilling operations
- Exploration and production drilling
- Directional drilling
- Geothermal drilling
- Mining drilling operations

What is the Delfi platform?

The secure, scalable, and open cloud-based Delfi platform offers solutions, apps, AI, physics-based science, and advanced edge and IoT solutions, with free-flowing data, to improve their exploration, development, drilling, production, and new energy operations. The Delfi platform connects workflows across E&P, so your domain teams can collaborate seamlessly and innovate faster at enterprise-level, driving maximum business performance, lower cost and lower carbon.