

Model, Plan, and Execute Faster with PetrisWINDS DriINET

PetrisWINDS DriINET is an advanced drilling engineering software framework developed by Petris. By combining the functionality from multiple world-class Maurer drilling applications into one integrated system/database with an easy-to-use and intuitive user interface, DriINET makes Well Engineering easier than ever. This user-friendly design, augmented by a 'traffic light' mechanism to check for missing or wrong data entries, allows better utilization of critical engineering resources and faster and more efficient training of new drilling personnel than ever before.

Features and Benefits

- ▶ **Tools Drilling Engineers Use Most** – Modular configuration allows the use of most-needed applications through a user-friendly interface that makes day-to-day operations simpler than any other tool available.
- ▶ **Share Data Among Users** – The Workgroup and Advanced versions promote data-sharing among users as well as data storage for future access.
- ▶ **Increases Operational Safety** – The powerful yet simple-to-use interface reduces training time, making it easier for new personnel to learn and use DriINET and easier to run multiple scenarios and simulations to help you anticipate and prevent drilling problems.
- ▶ **Project-Oriented Software** – Allows focus on the project of interest without having to filter data extraneous to the project.
- ▶ **Multi-Language Support** – Interface and input data in one language while generating reports another, easing the burden on local drilling crews while improving collaboration and communication.
- ▶ **Easy-to-Use Modeling Capabilities** – Discrete scenarios based upon variations in inputs can be modeled for quick assessments of potential program outcomes. Inputs can be adjusted during drilling using real data and new models generated to assess the progress of the program.
- ▶ **Comprehensive Help System** – Data completeness alerts are provided as well as detailed on line help including extensive theoretical background for each model.
- ▶ **Data Check for Input Variables** – Provides a simple 'red-green' traffic light schema to provide alerts for the status of input variables.
- ▶ **Flexible Report Generation** – Simple data-file management includes options for customizing graphics and producing professional-style printouts.
- ▶ **Built To Collaborate and Expand** – PetrisWINDS DriINET utilizes .NET technology to facilitate collaboration and application interconnectivity, including compatibility with PetrisWINDS Enterprise data management and integration framework.

PetrisWINDS DrillNET's networking capability permits data to be shared, stored, and reused among system users. Networking through DrillNET promotes collaboration and reduces overhead by allowing program data to be re-used. Designed to display text in multiple languages, DrillNET allows drilling engineers to work in the language of their choice even if reports must be generated in another language.

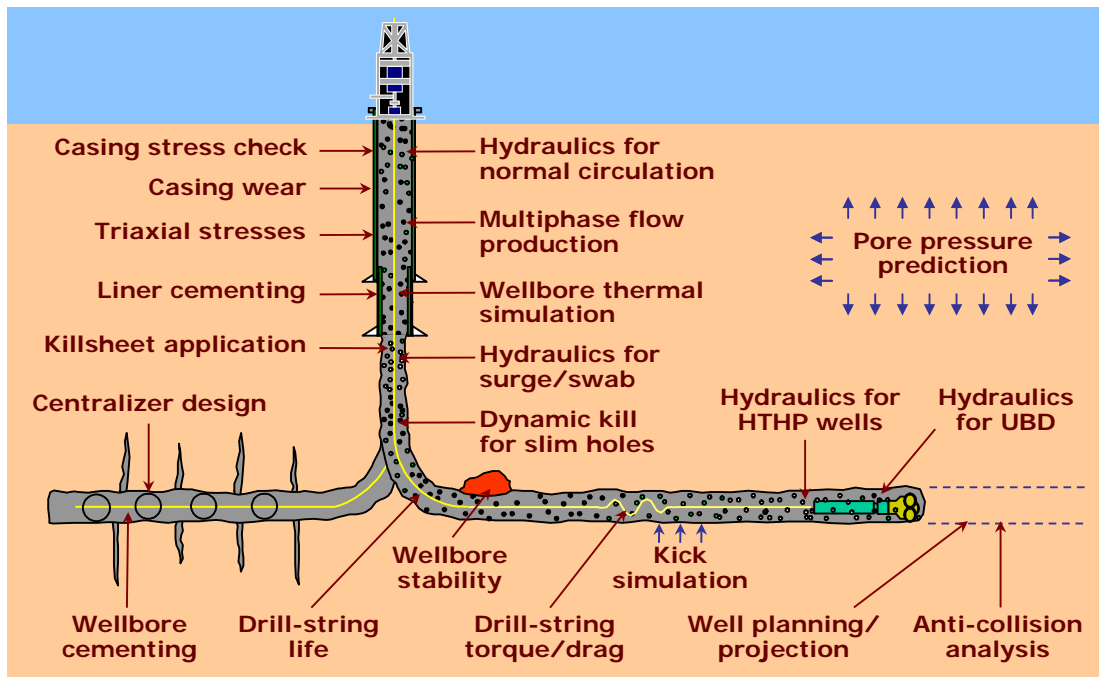
DrillNET's unique advantages build on the robust and advanced algorithmic processes and outputs that have always been the heart of the Maurer technologies.

Shorten your 'time to money' and increase operational safety with PetrisWINDS DrillNET.

PetrisWINDS DrillNET: Supporting the Collaborative Drilling Enterprise

A variety of problems can arise while planning and conducting drilling, completion, and workover operations. DrillNET helps solve problems like these:

- ▶ Designing complex well paths
- ▶ Checking for wellbore collisions
- ▶ Verifying casing performance
- ▶ Measuring torque and drag in the borehole
- ▶ Difficulties running casing strings
- ▶ Designing cement pump schedules
- ▶ Fatigue life in complex wellbores
- ▶ Designing hydraulics for managed-pressure drilling applications
- ▶ Well control



Available DrillNET Engineering Modules

Module		Primary Application
Wellbore Stability		
✓	Pore Pressure Prediction	Determines formation pore pressures from seismic stacking data
✓	Advanced Wellbore Stability	Analyzes mechanical/chemical stability of vertical or inclined wellbores
Well Planning		
✓	Well Planning/Projection	Generates 2D and 3D well paths
✓	Anti-Collision	Performs collision analyses between multiple well paths
Casing		
✓	Casing Stress Check	Performs casing verifications
✓	Wellbore Cementing	Analyzes multistage fluid placement in a wellbore
✓	Casing Wear	Predicts wear in casing and risers
✓	Centralizer Design	Calculates spacing of centralizers for casing in directional wells
✓	Liner Cementing	Calculates torque and axial loads on a liner while cementing
Tubular Mechanics		
✓	Drill-String Torque/Drag	Analyzes torque, drag and buckling of drill strings
✓	Drill-String Life	Predicts fatigue damage of drill strings
✓	Triaxial Stresses	Calculates limits for burst/collapse pressure and equivalent stresses
Wellbore Hydraulics		
✓	Hydraulics for Normal Circulation	Evaluates fluid hydraulics for drilling and completion operations
✓	Hydraulics for Surge/Swab	Evaluates fluid hydraulics for surge and swab pipe movements
✓	Hydraulics for Underbalanced Drilling	Designs and monitors managed-pressure drilling and completion operations
✓	Hydraulics for HTHP Wells	Calculates impact of pressure and temperature on mud rheology
✓	Wellbore Thermal Simulation	Predicts down-hole temperature distributions
Well Control		
✓	Killsheet Application	Calculates kill information and prepares a drill-pipe pressure schedule
✓	Kick Simulation	Describes complex multiphase flow that develops as a gas influx is circulated out of a well
✓	Dynamic Kill for Slim Holes	Analyzes hydraulics and well control in slim annuli

PetrisWINDS DrillNET includes a complete range of Drilling Engineering modules for use in the office and at the rig.

Flexible Framework

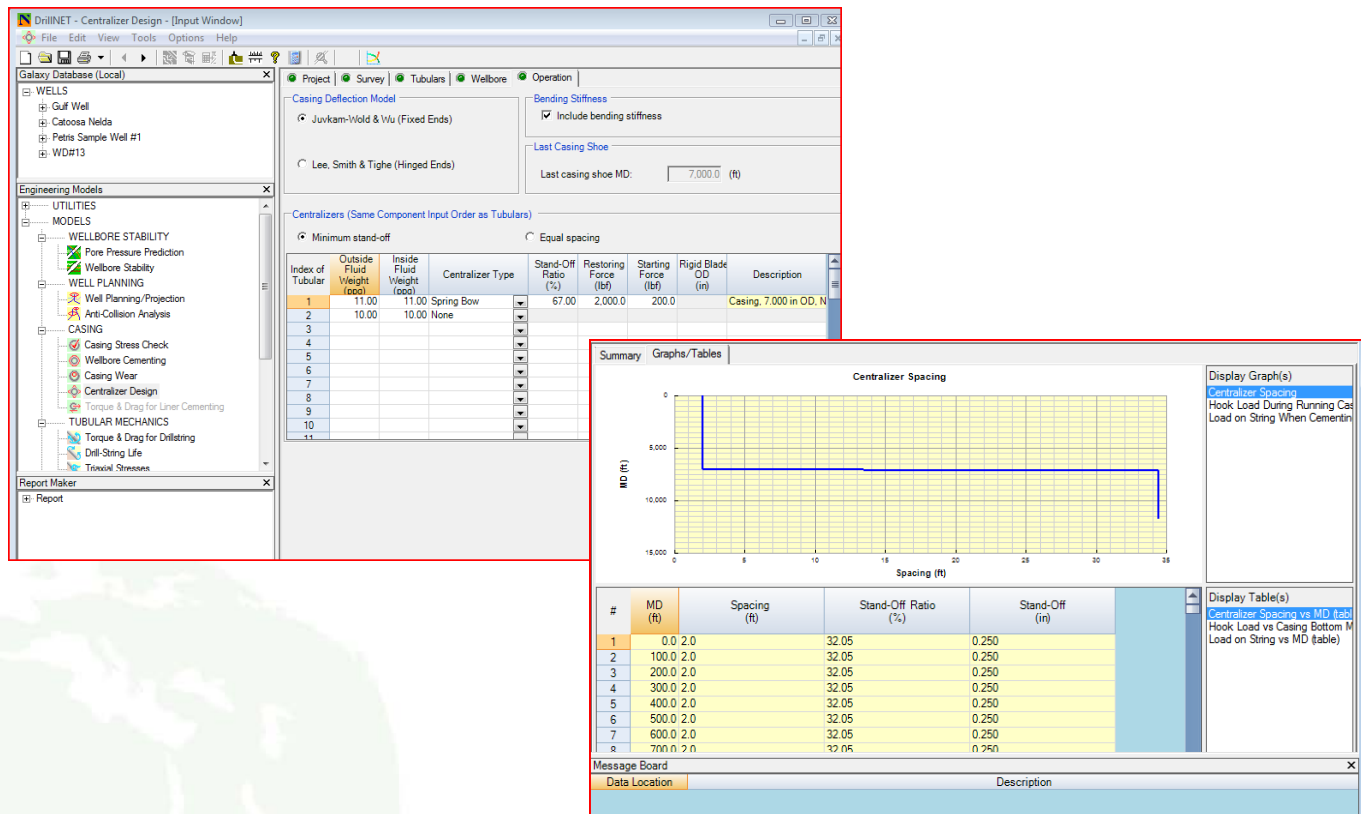
PetrisWINDS DrilINET combines the superb functionality of multiple Maurer drilling modules into one user-friendly application through a flexible Framework approach. There are three levels available for PetrisWINDS DrilINET; each version is licensed on a named user basis:

- **Basic** – For businesses that have only one or two users, the Basic version provides the ability for a single user to use the same data in multiple Modules throughout the interface and store it in an individual database.
- **WorkGroup** – Ideal for companies with up to 10 users, the WorkGroup version adds to the Basic version the ability for users to share the data with each other and to access a collective database.
- **Advanced** – Designed for large enterprises employing more than 10 users, the Advanced version provides more scalability for large numbers of users while providing the data capture, sharing, and database support inherent in the WorkGroup version.

Each Framework approach may include one or more Engineering Modules, which correspond to specific functions performed to support individual drilling activities. Purchase as many or as few of these Modules as your organization requires, or add them later as needs and activities change.

The Best in Drilling Applications

PetrisWINDS DrilINET offers a unique value proposition: a world-class drilling applications suite that runs through a user-friendly interface, reducing training time while allowing data to be stored and reused. DrilINET saves companies time and money while ensuring the best possible results. Interested? Give Petris a call today to learn more about how DrilINET can benefit your drilling operations.



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