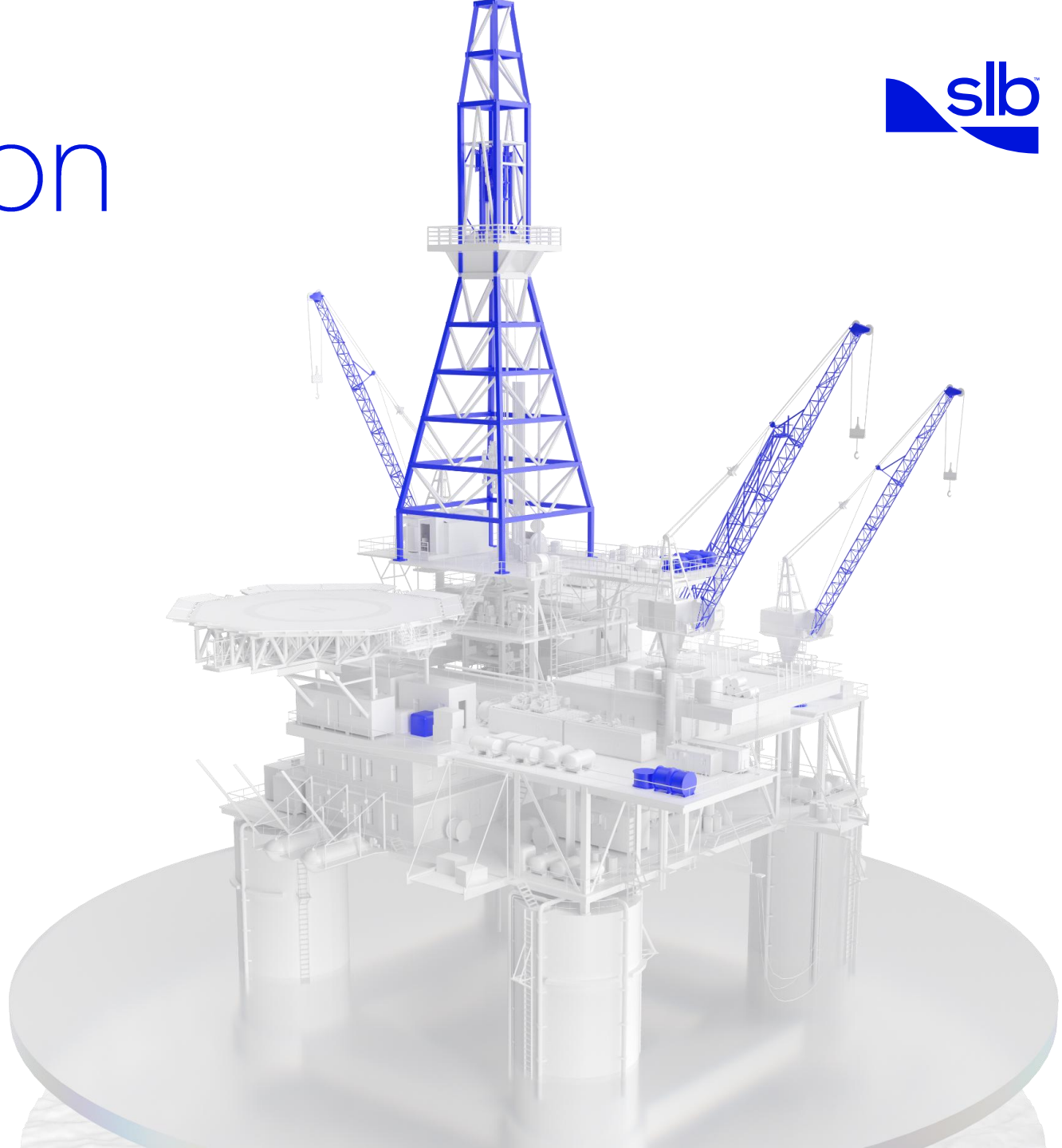
Well Construction Measurements Portfolio

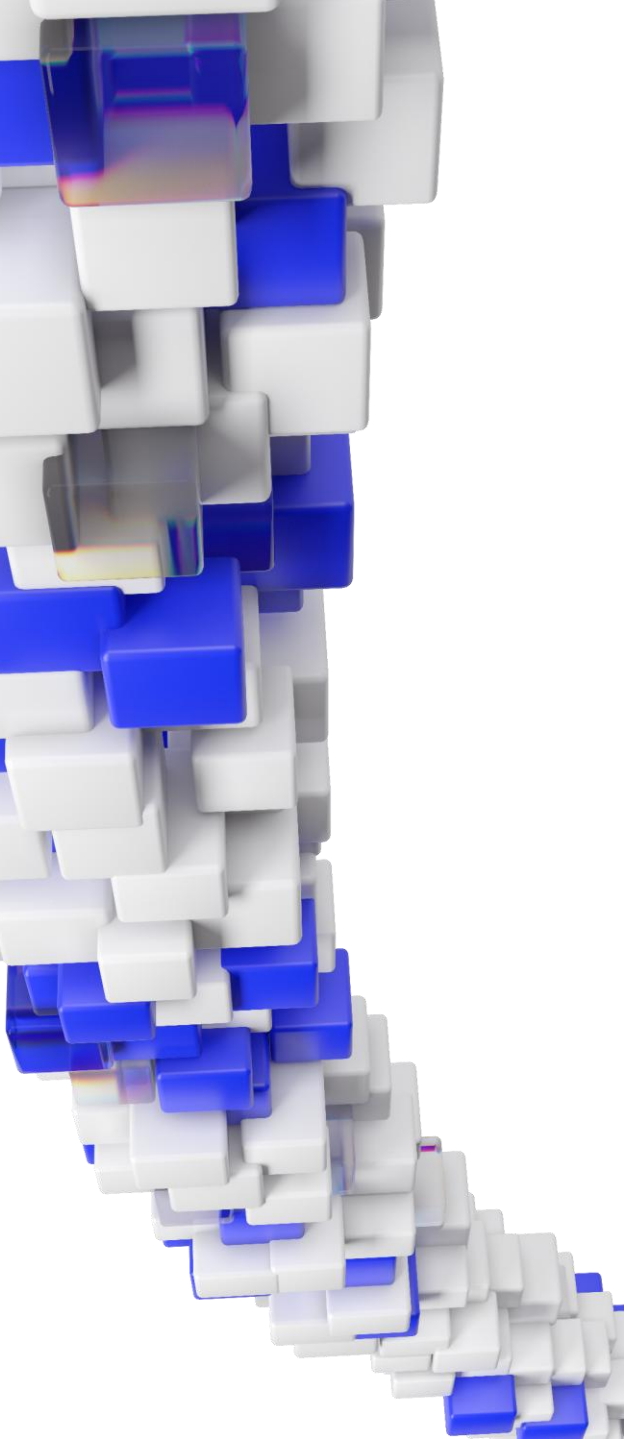


2025

slb.com/wellconstructionmeasurements

Transcend conventional drilling for seamless, end-to-end well construction solutions that catapult superefficiency

– Well Construction



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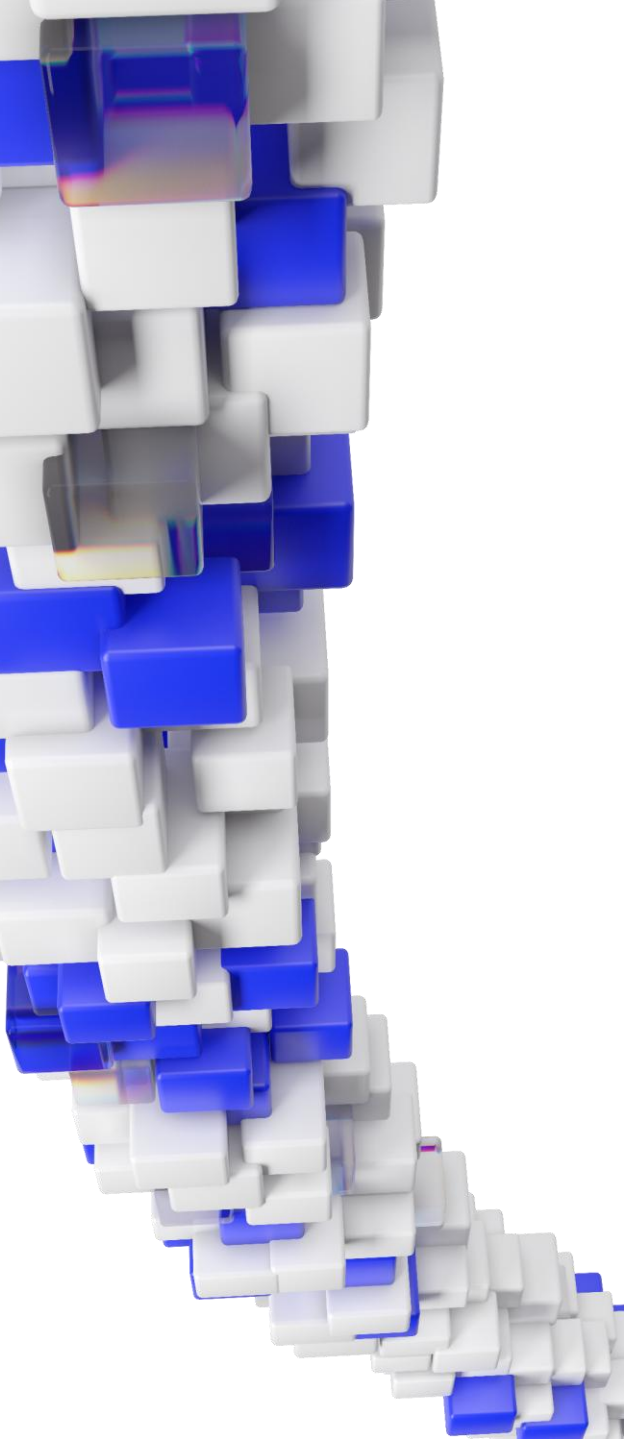

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  Pore pressure analysis service in real-time

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  Advanced real-time fluids logging and analysis service
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- Isotope Fluid Logging C_1-C_1
  Real-time cogenetic hydrocarbon fluid typing
- DQ1000
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Surface geology evaluation

- EcoFlex
  Multifactor cuttings evaluation while-drilling service
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  Multifactor shale-cuttings evaluation while-drilling service

Automated logging

- Automated Lithology
  Increase your lithological accuracy and enhance well planning

Rotary and At-Bit Steerable System

PowerDrive Orbit

Precise and versatile rotary steerable system

Applications

- → Curves and laterals
- → High-performance drilling
- → Complex fluid systems
- → Extended-reach drilling

Features

- → Innovative pad design with metal-to-metal sealing to handle corrosive drilling fluids and severe downhole conditions
- → Expanded revolution rate limits, supporting up to 350 rev/min for higher ROP and stick and slip control
- → Six-axis continuous inclination and azimuth measurements for better true-vertical-depth (TVD) definition and accurate well positioning
- → Dual downlink options to fulfill all commands from surface in any rig type
- → Supports up to 350 rpm, delivering higher ROP and minimizing stick/slip

Benefits

- → Handles aggressive drilling fluids and severe downhole conditions with metal-to-metal sealing
- → Drills from shoe to TD in a single run, reducing operating days

Operating specifications					
	475	675	825	900	1100
Hole size, in	5 3/4 – 6 3/4	8 1/2 – 8 3/4	10 5/8	12 1/4 – 18 1/8	26
Max. operating temperature, degF [degC]	302 [150]	302 [150]	302 [150]	302 [150]	302 [150]
Pass through (DLS sliding) °/100 ft	30	16	12	10	4
Bit speed	0–350	0–350	0–350	0–350	0–220
Flow range, galUS/min	120–355	210–970	280–2,000	280–2,000	280–2,000
Max. pressure, psi	20,000	20,000	20,000	20,000	20,000

slb.com/PowerDriveOrbit

PowerDrive Orbit G2

High-performance rotary steerable system

Applications

- → Curves and laterals
- → High-performance drilling operations that require higher dogleg severity (DLS) and longer runs
- → Complex fluid systems
- → Extended-reach drilling

Features

- → Reduced distance from cutting structure to pad delivers greater curvature control
- → Row of PDC cutters protects mechanical parts from erosion and enhances the push action of the pads
- → Eight-sector near-bit azimuthal gamma ray identifies zones of interest
- → Innovative pad design with metal-to-metal sealing to handle corrosive drilling fluids and severe downhole conditions
- → Six-axis continuous HD surveys optimize well placement
- → Dual downlink options to fulfill all commands from surface for any rig type

Benefits

- → Expanded DLS capability for tighter curves
- → Optimized well placement with six-axis continuous hold inclination and azimuth measurements
- → Higher abrasion resistance for longer, tougher runs
- → Improved directional control and minimized tortuosity for smoother tangents

Operating specifications					
	475	675	825	900	1100
Hole size, in	$5^{3/4}$ to $6^{3/4}$	$8^{1/2}$ – $8^{3/4}$	$10^{5/8}$	$12^{1/4}$ – $18^{1/8}$	26
Max. operating temperature, degF [degC]	302 [150]	302 [150]	302 [150]	302 [150]	302 [150]
Pass through (DLS sliding) °/100 ft	30	16	12	10	4
Bit speed	0–350	0–350	0–350	0–350	0–220
Flow range, galUS/min	120–355	210–970	280–2,000	280–2,000	280–2,000
Max. pressure, psi	20,000	20,000	20,000	20,000	20,000

slb.com/PowerDriveOrbitG2

PowerDrive Xcel

Point-the-bit rotary steerable system

Applications

- → Sidetracking
- → Zone-of-exclusion (ZOE) drilling
- → Geostopping
- → Dogleg severity (DSL) assurance
- → Extended-reach drilling (ERD)

Features

- → Gyroscopic sensor with accelerometers and magnetometers
- → Total gamma ray sensor place near bit
- → Reinforce critical components for enhanced durability
- → Configurable bend to enable higher DLS and smoother well profiles
- → QuikDownlink™ continuous-circulation downlink service
- → No need for lithium batteries

Benefits

- → Delivers sidetracking capabilities
- → Increases geological certainty near the bit
- → Provides redundant control for trajectory optimization and superior reliability
- → Enables both higher DLS and smoother well profiles
- → Enables longer runs in standard PowerDrive vorteX™ high-powered rotary steerable system configurations

Operating specifications		
	675	900
Hole size, in	$8^{1/2}$ – $8^{3/4}$	$12^{1/4}$ – $17^{1/2}$
Max. operating temperature, degF [degC]	302 [150]	302 [150]
Pass through (DLS sliding) °/100 ft	15	12
Bit speed	0-350	0-350
Flow range, galUS/min	260-805	260-1,800
Max. pressure, psi	20,000	20,000

slb.com/PowerDriveXcel

PowerDrive Archer

Hybrid rotary steerable system

Applications

→ High-curvature 3D wells
→ Sidetrack and dogleg severity (DLS) assurance

Features

→ Unique hybrid steering unit for maximum DLS
→ Near-bit continuous inclination and azimuth measurement
→ Near-bit azimuthal gamma ray measurement

Benefits

→ High build rates from any inclination
→ Well trajectory previously only possible with positive displacement motors
→ Improved wellbore placement in reservoir's sweet spot
→ Smooth wellbore to ease completion

Operating specifications		
	475	675
Hole size, in	57/8 to 63/4	83/8 – 95/8
Max. operating temperature, degF [degC]	302 [150]	302 [150]
Pass through (DLS sliding) °/100 ft	30	16
Bit speed	0–350	0–350
Flow range, galUS/min	130–355	220–650
Max. pressure, psi	20,000	20,000

slb.com/PowerDriveArcher

NeoSteer CL / CLx

At-bit steerable system

Applications

→ The NeoSteer at-bit steerable system (ABSS) is specifically designed to enable drilling the vertical, curve and lateral well profiles in a faster single run where other methods require multiple BHAs/trips

Features

→ Application-specific SLB PDC bit design
→ Nonmagnetic steering unit body
→ Dual hydraulically activated pistons
→ Inclination and azimuth closed loops to provide advanced automated tangent and curve control
→ Proprietary high-endurance-strength connector
→ Near-bit measurements including:
  → Inclination
  → Azimuthal
  → Gamma ray
  → Azimuthal gamma ray

Benefits

→ Complex 3D profiles with aggressive tangents
→ Gets to TD quicker by avoiding the post-curve trip
→ Lower CO_2 emissions by drilling more sections in one run.
→ Unique fully integrated steering and cutting structure
→ Attain a high build rate with effective geosteering
→ Fully rotating system
→ Automated trajectory control (HIA, Auto-Curve) - Streamline completion with straight laterals

Operating specifications	
	675
Hole size, in	81/2
Max. operating temperature, degF [degC]	302 [150]
Pass through (DLS sliding) °/100 ft	16
Bit speed	0-350
Flow range, galUS–min	210-970
Max. pressure, psi	20,000

slb.com/NeoSteer

NeoSteer Max

Unconventional high-performance at-bit steerable system

Applications

→ Designed to thrive in the most demanding unconventional reservoirs, the high-performance at-bit steerable system leverages a novel, ruggedized control unit design to overcome harsh downhole conditions.

Features

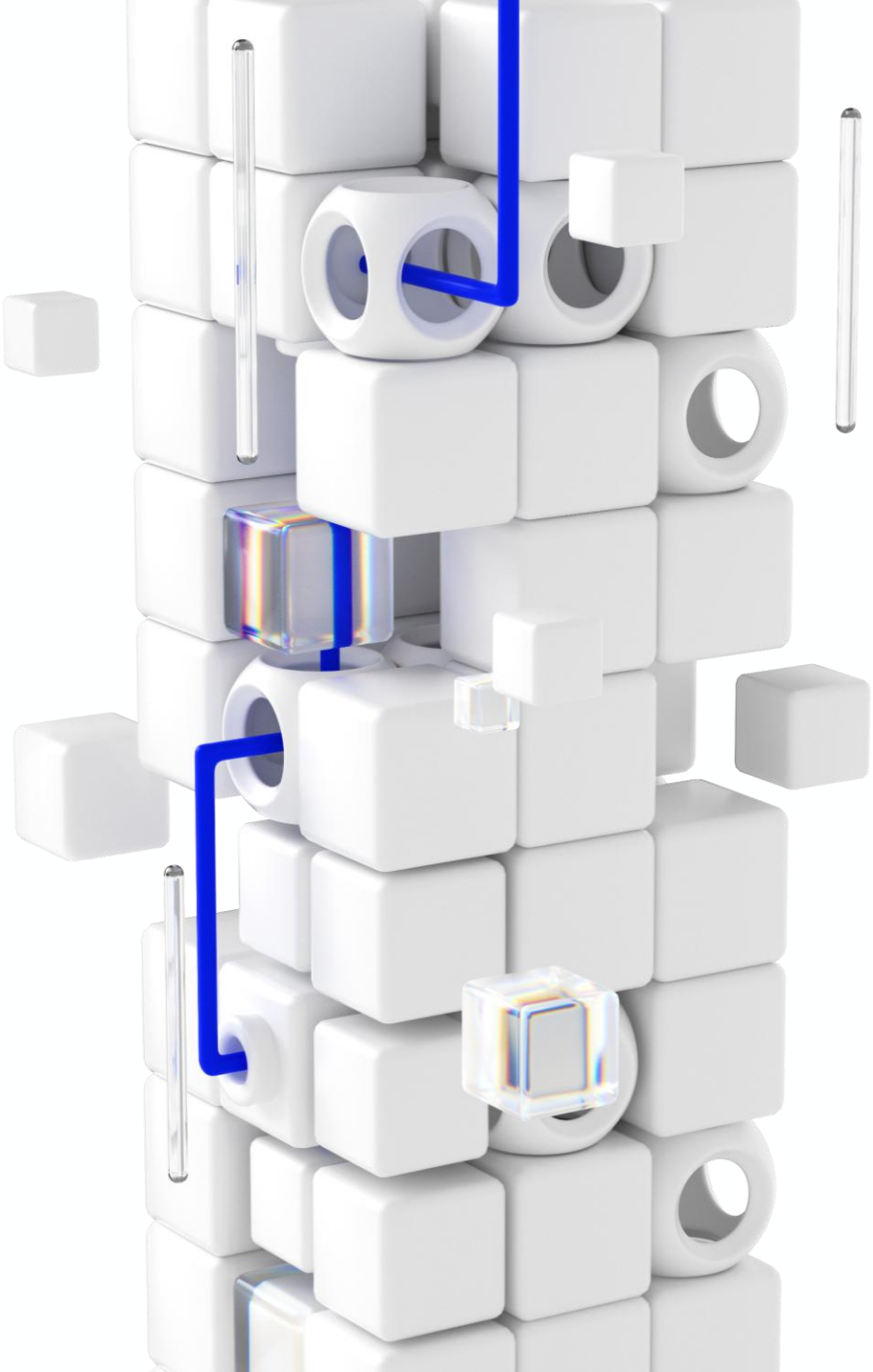
→ High-endurance-strength bit connection
→ Fully optimized bottle bore collar to improve RT comms
→ Ruggedized roll stabilized control unit
→ Wider operating windows on high-mud-weight and high-solids environments
→ Boltless collar for harsh drilling
→ Downhole automation enhanced by Neuro ADD
→ Near-bit measurements including:
  → Inclination
  → Azimuthal
  → Gamma ray
  → Azimuthal gamma ray

Benefits

→ Enables single-run drilling of vertical, curve, and lateral sections with a single BHA
→ Achieves high-build rates and long lateral length requirements
→ Provides uninterrupted real-time data transmission
→ Drill bit: Matrix body with steel connection / Proprietary high-endurance-strength connector
→ Enhanced box connection durability
→ Increases durability and resilience

Operating specifications	
	675
Hole size, in	81/2
Max. operating temperature, degF [degC]	302 [150]
Pass through (DLS sliding) °/100 ft	16
Bit speed	0-350
Flow range, galUS–min	210-970
Max. pressure, psi	20,000

slb.com/NeoSteer



Measurements-while-drilling and Gyro-while-drilling

TruLink

Definitive dynamic survey-while-drilling service

Applications

- → Ranging
- → Complex 3D trajectories
- → Long laterals and extended reach drilling (ERD) wells
- → Tight geological targets
- → Unstable formation
- → Unconventional
- → Geothermal drilling
- → Onshore and offshore operation
- → Ability to run TruLink as Power Sub

Features

- → Definitive dynamic surveys (DDS) – IP Pattern
- → Gamma ray, downhole weight on bit, downhole torque, annular pressure while drilling
- → Tri-axial shock and vibration
- → High temperature rating
- → New telemetry modes

Benefits

- → Reduce connection time
- → Eliminate survey operation
- → Provides precise and continuous survey data for better trajectory control
- → Reduce well delivery cost by minimizing stuck pipe risk, reducing washouts and improving hole cleaning
- → Improve drilling efficiency by increasing bottom drilling time
- → Maximizes economic recovery by improving navigation control in the reservoir
- → Reduces HSE exposure, costs, and emissions

Operating specifications				
Collar Size	675	825	900	925
Max. operating temperature, degF [degC]	302 [150] 347 [175]	302 [150] 347 [175]	302 [150] 347 [175]	302 [150] 347 [175]
Max. tool curvature, °/100 ft	8 – Rotating 15 – Sliding	7 – Rotating 12 – Sliding	7 – Rotating 12 – Sliding	6 – Rotating 10 – Sliding
Flow range, galUS/min	200-1,000	200-1,000	300-2,000	300-2,000
Max. pressure, psi	25,000 30,000	25,000 30,000	25,000	25,000

slb.com/TruLink

Stream

High-speed intelligent telemetry

Applications

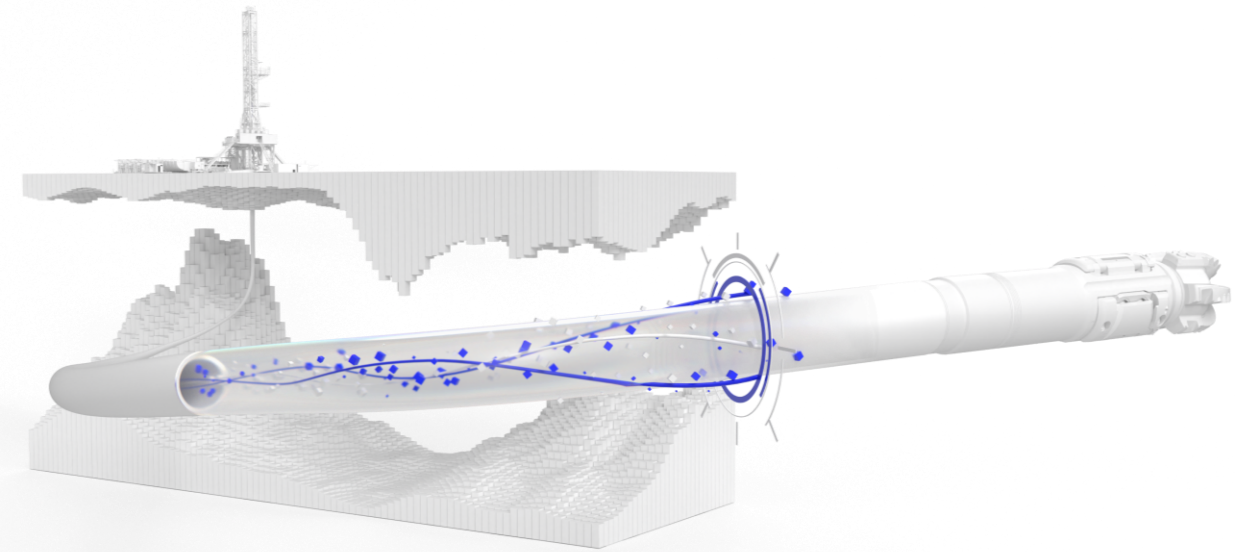
- → Extended-reach drilling
- → Complex geological profiles
- → Uncertain drilling conditions
- → Performance drilling improvements

Features

- → Fully automated planning
- → Cutting-edge algorithm combined with artificial intelligence and machine learning
- → No additional tools or surface equipment needed—exclusive to TruLink service
- → Continuous signal improvements from automated telemetry and troubleshooting
- → New telemetry modes available
- → Reduces human intervention

Benefits

- → Ensures no signal limitations in deeper extended wells or challenging environments
- → Enables optimal decisions based on real-time high-definition data quality
- → Provides detailed reservoir insights at high ROP
- → Enhances autonomous telemetry, increasing on-bottom time
- → Eliminates telemetry constraints in complex BHAs
- → Improves remote operations



slb.com/Stream

xBolt G2

Accelerated drilling service

Applications

- → Unconventional
- → Land performance drilling
- → Pad and batch drilling operations
- → Horizontal wells with long lateral sections

Features

- → Dual Telemetry
- → HFTO
- → Azimuthal GR
- → Tri-Axial shock and vibration
- → High temperature rating
- → Configure system flexibility
- → APWD capabilities working with 3rd party

Benefits

- → Reduce the connection time
- → Eliminate survey time with EM
- → Increases high-speed communication rate with EM telemetry
- → Telemetry assurance, enables switching between EM, mud pulse and dual telemetry in real-time
- → Reveal bed crossing and boundaries
- → LCM and air drilling capabilities working with EM telemetry with no moving parts

Operating specifications			
Collar Size	475	675	800
Hole size, in	5 7/8 – 6 3/4	8 1/4 – 9 7/8	10 1/2 –14 3/4
Max. operating temperature, degF [degC]	329 [165]	329 [165]	329 [165]
Max. tool curvature, °/100 ft Dual Telemetry	15 – Rotating 30 – Sliding	10 – Rotating 20 – Sliding	8 – Rotating 16 – Sliding
Max. flow, galUS/min	375	750	900
Max. pressure, psi	20,000	20,000	20,000

slb.com/xBoltG2

TruMax

Applications

- → Unconventional operations
- → Geosteering
- → Pad and batch drilling
- → Anticollision avoidance in lateral sections
- → Challenging long laterals
- → Lost circulation materials and air drilling
- → High-temperature environments
- → Harsh drilling conditions

Features

- → Gyro integration available
- → New pulser technology
- → Robust electronics
- → Azimuthal gamma ray
- → Modular MWD technology
- → High-speed data transmission
- → Dual telemetry: electromagnetic (EM) and
- → mud pulse
- → High-temperature operational envelope
- → Performance Live™ digital service delivery center
- → support and remote operations compatible

Benefits

- → Positions wells precisely using gyro for
- → accurate drilling
- → Enhances safety by minimizing risk due to magnetic interference in crowded reservoirs
- → Improves geosteering confidence for better directional control
- → Eliminates survey time, increasing operational efficiency
- → Reduces undesirable trip-out-of-hole events with dual telemetry and advanced pulser technology
- → Ensures consistent performance with robust electronics and gyro integration, boosting reliability

Operating specifications		
Collar Size	475	675
Hole size, in	5 7/8 – 6 3/4	8 1/4 – 9 7/8
Max. operating temperature, degF [degC]	329 [165]	329 [165]
Max. tool curvature, °/100 ft Dual Telemetry	15 – Rotating 30 – Sliding	10 – Rotating 20 – Sliding
Max. flow, galUS/min	340	700
Max. pressure, psi	20,000	20,000

slb.com/TruMax

ImPulse

Integrated MWD platform

Applications

- → Slimhole measurements demands
- → Land and offshore environments
- → Invasion profiles
- → Horizontal wells with long lateral sections

Features

- → Real-time survey, Azimuthal GR, and resistivity measurements
- → Downhole power generation with mud turbine
- → 10 multidepth resistivities
- → Compact, integrated design with sensors close to the bit
- → High temperature rating

Benefits

- → Real-time formation evaluation
- → Precise directional control
- → Multiple depths of investigation
- → Combinable with other tools

Operating specifications	
Collar Size	475
Hole size, in	$5^{3/4}$ – $6^{3/4}$
Max. operating temperature, degF [degC]	350 [175]
Max. tool curvature, °/100 ft Dual Telemetry	15 – Rotating 25 – Sliding
Max. flow, galUS/min	375
Max. pressure, psi	20,000 25,000

slb.com/ImPulse

GyroLink

Definitive gyro-while-drilling service

Applications

- → Infill drilling
- → Ranging
- → Unconventional
- → Geothermal drilling
- → Onshore and offshore

Features

- → Survey collection in 63 seconds
- → Three-axis, solid-state gyro technology
- → Temperature rating: 150 degC [302 degF]
- → Autonomous survey for remote decision making
- → High accuracy at all altitudes

Benefits

- → Provides precise survey data quickly
- → Enables accurate well spacing in dense reservoir sections
- → Solves operational challenges including harsh drilling, mature field development, and geothermal well interception
- → Maximizes economic recovery of the reservoir through high-quality boreholes
- → Autonomously performs survey quality control to enable remote decision making and save operating time
- → Minimizes stuck-pipe risk
- → Reduces HSE exposure, costs, and emissions

Operating specifications

	475	675	825	950
Max. operating temperature, degF [degC]	302 [150]	302 [150]	302 [150]	302 [150]
Max. tool curvature, °/100 ft	15 – Rotating 30 – Sliding	8 – Rotating 15 – Sliding	7 – Rotating 12 – Sliding	6 – Rotating 10 – Sliding
Max. flow, galUS/min	400	1,000	2,000	2,000
Max. pressure, psi	25,000 30,000	25,000 30,000	25,000 30,000	25,000

slb.com/GyroLink

MicroGuide

High-resolution tortuosity logging

Applications

- → Drilling
- → Completions
- → Production

Features

- → 3D visualization of borehole quality
- → High-resolution tortuosity and obstruction analysis
- → Future field development improvement by running in existing datasets
- → Real-time decisions with TruLink™ definitive dynamic survey-while-drilling service and GyroLink™ definitive gyro-while-drilling service

Drilling

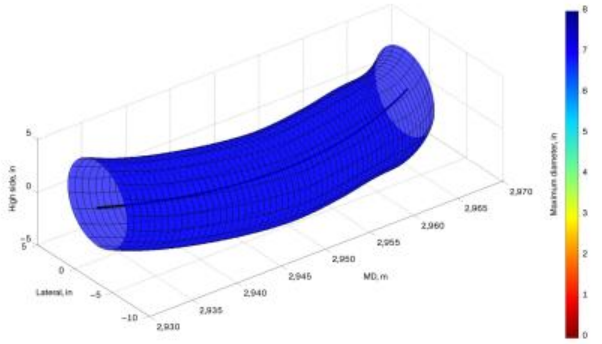
- → BHA design
- → Wellbore quality
- → Casing wear
- → Drilling dynamics

Completions

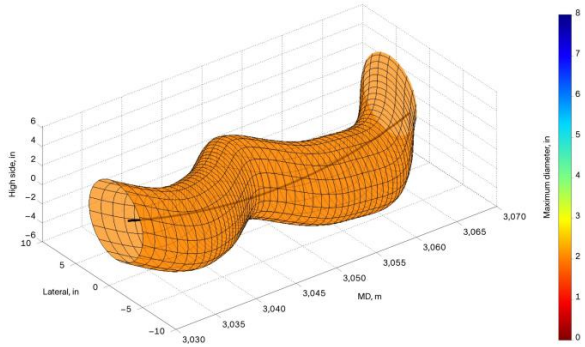
- → Torque and drag
- → Insertion modeling
- → Liner seal placement
- → Packer placement and setting
- → Perforating gun BHA optimization

Production

- → ESP placement
- → Rod guide design and placement
- → Tubing tension
- → Seating nipple location
- → Subsidence monitoring



MicroGuide high-resolution tortuosity log delivers 3D visualization of the wellbore shape to enable optimal wellbore and pump placement.



MicroGuide log's high-resolution 3D visualization (based on high frequency survey data) quickly identifies tight intervals or tortuosity issues. This MicroGuide log uncovers hidden tortuosity that could not be seen in a low-resolution survey.

slb.com/MicroGuide

Logging While Drilling

SonicScope

Multipole sonic-while-drilling service

Applications

- → Borehole stability and pore pressure monitoring
- → Real-time and memory top-of-cement evaluation
- → Cement bond index calculation
- → Synthetic seismogram generation for seismic tie-in
- → Porosity evaluation and hydrocarbon identification
- → Fracture evaluation
- → Perforation optimization

Features

- → 48 digitized receivers with refined inter receiver spacing to prevent aliasing at any depth
- → Wideband multipole transmitter to eliminate complex source selection
- → Flexible multimode, high-resolution acquisition recorded in 2-GB memory
- → Slowness-time-coherence projection, surface labeling, and QC logs
- → Real-time and memory Leaky-P models
- → High-speed acquisition and real-time capability up to 1,800 ft/h for 6-in sampling
- → Automatic labeling
- → Real-time and memory monopole compressional and shear data
- → Real-time and memory quadrupole shear data

Benefits

- → Mitigates risks and reduces costs by enabling real-time decision making
- → Enhances production through optimized completion design
- → Strengthens understanding of cement placement and quality
- → Increases operational flexibility with the ability to run anywhere in BHA configuration—even with two reamers
- → Improves understanding of wellbore strength and stability by obtaining compressional and shear data independent of mud slowness, in any formation
- → Enables more effective mud-weight window management

Operating specifications				
	475	675	825	900
Hole size, in	5 5/8 to 8	8 1/4 – 10 5/8	10⅞ - 17½	12 1/4 - 26
Max. operating temperature, degF [degC]	302 [150]	302 [150]	302 [150]	302 [150]
Max. tool curvature, °/100 ft	15 – Rotating 30 – Sliding	8 – Rotating 16 – Sliding	7 – Rotating 14 – Sliding	6 – Rotating 12 – Sliding
Max. flow, galUS/min	400	800	1,200	1,600
Max. pressure, psi	25,000	25,000	25,000	25,000

slb.com/SonicScope

MicroScope

Resistivity and imaging-while-drilling service

Applications

- → Formation evaluation
- → Horizontal well placement
- → Fracture identification to optimize completions

Features

- → Quantitative formation resistivity with minimal bed boundary effects
- → Real-time and recorded resistivity imaging at four depths of investigation
- → Advanced data compression technique for high-quality transmission of images
- → Four azimuthally focused resistivity measurements
- → Two nonazimuthal resistivity measurements
- → Azimuthal GR
- → Bit and mud resistivity
- → Real-time data using MWD services

Benefits

- → Saves time by acquiring data while drilling
- → Enhances well positioning
- → Provides key information for completion design optimization and stimulation strategy
- → Facilitates more accurate reserve estimation
- → Identifies bypassed pay zones

Operating specifications	
	475
Hole size, in	5 7/8 – 6 1/2
Max. operating temperature, degF [degC]	302 [150]
Max. tool curvature, °/100 ft	15 – Rotating 30 – Sliding
Max. flow, galUS/min	400
Max. pressure, psi	20,000

slb.com/MicroScope

MicroScope HD

Resistivity— and high-definition imaging-while-drilling service

Applications

- High-resolution petrophysical evaluation for improved reserves estimate
- Fine-scale geological interpretation
- Real-time interpretation

Features

- High-definition imaging with 0.4-in button size and 0.125-in x 0.25-in pixel resolution
- Multi depth (4) high-resolution images with full borehole coverage
- Four azimuthal focused electrode resistivity measurements
- At-bit and mud resistivity
- Measurement of inclination, shocks, and temperature

Benefits

- Saves rig time
- Provides multi-depth high-resolution azimuthal laterolog resistivity arrays that cover the same formation volume as density and neutron measurements for improved petrophysical evaluation
- Improves geological interpretation
- Enhances well placement in complex environments
- Enables drilling parameter optimization and real-time wellbore stability analysis

Operating specifications		
	475	675
Hole size, in	5 7/8 – 6 1/2	8½ – 9⅞
Max. operating temperature, degF [degC]	302 [150]	302 [150]
Max. tool curvature, °/100 ft	15 – Rotating 30 – Sliding	8 – Rotating 16 – Sliding
Max. flow, galUS/min	400	800
Max. pressure, psi	20,000	20,000

slb.com/MicroScopeHD

TerraSphere

High-definition dual-imaging-while-drilling service

Applications

- Geosteering: sourceless steering in OBM, pressure and sampling point selection, completion optimization
- Geology: structural and sedimentological analysis and fracture characterization
- Geomechanics
- Drilling optimization

Features

- Dual physics (resistivity and ultrasonic) high-definition images in OBM (<1 in) in one single collar
- Novel compression for real-time transmission
- Wide range of operating environments
- High-definition 360° caliper for detailed borehole shape
- Wideband of resistivity and ultrasonic data to enable robust acquisition
- Novel design enables full borehole coverage over large ROP and rpm ranges
- Battery-less operation enhances safety
- Interpretation and visualization of data available in Techlog wellbore software platform, Petrel* EandP software platform, and other platforms

Benefits

- Enhances geosteering and maximizes potential production
- Optimizes drilling operations
- Improves reservoir understanding
- Saves rig time and cost

Operating specifications	
	675
Hole size, in	8 3/8 – 9 7/8 *
Max. operating temperature, degF [degC]	302 [150]
Max. tool curvature, °/100 ft	8 – Rotating 16 – Sliding
Max. flow, galUS/min	800
Max. pressure, psi	30,000

*Up to 14 in for Ultrasonic Imaging

slb.com/TerraSphere

seismicVISION

Seismic-while-drilling service

Applications

- → Placing the bit on the seismic map while drilling
- → Predicting target depths and adjusting well trajectory
- → Identifying salt proximity in real time
- → Landing the well in the best place in the reservoir
- → Updating coring and casing points while drilling
- → Providing input data to constrain pore-pressure models while drilling
- → Optimizing mud weight
- → Providing information for salt proximity and preparation for salt exits

Features

- → Real-time waveforms for QC and look-ahead seismic profile
- → Recorded multicomponent waveforms for advanced processing
- → Acquisition performed during pipe connection
- → Real-time data using MWD service
- → HP options available

Benefits

- → Saves rig time and cost
- → Improves safety
- → Reduces depth uncertainty
- → Reduces casing runs
- → Reduces sidetracks and pilot holes

Operating specifications			
	675	825	900
Hole size, in	8⅜ – 10⅝	10⅞ – 6½	10⅞ – 6½
Max. operating temperature, degF [degC]	302 [150]	302 [150]	302 [150]
Max. tool curvature, °/100 ft	8 – Rotating 16 – Sliding	7 – Rotating 14 – Sliding	4 – Rotating 12 – Sliding
Max. flow, galUS/min	800	2,000	2,000
Max. pressure, psi	23,000 HP option 30,000	23,000 HP option 30,000	23,000

slb.com/seismicVISION

PeriScope HD

Multilayer bed boundary detection service

Applications

→ Geosteering
→ Landing optimization
→ Brownfield, marginal reservoir
→ Formation evaluation while drilling

Features

→ Best in class Stochastic inversion – superior continuity and certainty
→ Digital solution for faster decision making in collaborative environment
→ Improved accuracy using multifrequency calibrated EM measurements
→ Annular Pressure While Drilling (APWD)
→ Azimuthal Gamma Ray

Benefits

→ Improves production
→ Reduces cost and risk
→ Enables consistent performance

Operating specifications		
	475	675
Hole size, in	5 5/8 – 6 3/4	8⅜ – 10⅝
Max. operating temperature, degF [degC]	302 [150]	302 [150]
Max. tool curvature, °/100 ft	15 – Rotating 30 – Sliding	8 – Rotating 16 – Sliding
Max. flow, galUS/min	400	800
Max. pressure, psi	25,000	25,000

slb.com/PeriScopeHD

PeriScope Edge

Multilayer mapping-while-drilling service

Applications

- → Geosteering
- → Landing optimization
- → Delineation of multilayer targets (up to 8 layers)
- → Brownfield, marginal reservoir
- → Formation evaluation while drilling

Features

- → New deep measurement to see >25 ft
- → Best in class inversion — superior continuity, definition, and certainty
- → Digital solution for faster decision making in collaborative environment
- → Improved accuracy using multifrequency calibrated EM measurements, new deep EM image
- → Independent Stochastic and Deterministic inversions
- → Annular Pressure While Drilling (APWD)
- → Azimuthal Gamma Ray

Benefits

- → Improves production
- → Reduces cost and risk
- → Enables consistent performance

Operating specifications		
	475	675
Hole size, in	5 5/8 – 6 3/4	8⅜ – 10⅝
Max. operating temperature, degF [degC]	302 [150]	302 [150]
Max. tool curvature, °/100 ft	15 – Rotating 30 – Sliding	8 – Rotating 16 – Sliding
Max. flow, galUS/min	400	800
Max. pressure, psi	25,000	25,000

slb.com/PeriScopeEdge

GeoSphere HD

High-definition reservoir mapping-while-drilling service

Applications

- → Mapping and interpretation of multiple stratigraphic surfaces, reservoir thickness, and formation dips
- → Accurate landing of wells
- → Reservoir exposure maximization
- → Water zone detection and avoidance
- → Drilling risk reduction
- → Multilayer formation modeling
- → Near-wellbore 3D structural modeling

Features

- → High-definition multiboundary mapping with uncertainty quantification
- → Depth of investigation in excess of 250 ft (76.2 m)
- → Cloud-enabled, fully automated inversions
- → Real-time inversion results with no compromise on ROP
- → Widest frequency range in the industry

Benefits

- → Increase potential production and recovery rates
- → Unlock access to new or marginal reserves
- → Minimize water production
- → Avoid drilling hazards
- → Estimate reserve with greater accuracy
- → Reduce number of pilot holes
- → Eliminate geological sidetracks
- → Refine seismic interpretation

Operating specifications			
	475	675	825
Hole size, in	5 5/8 – 6 3/4	8⅜ – 10⅝	10 1/2 –14 3/4
Max. operating temperature, degF [degC]	302 [150] *	302 [150] *	302 [150] *
Max. tool curvature, °/100 ft	15 – Rotating 30 – Sliding	8 – Rotating 16 – Sliding	7 - Rotating 14 – Sliding
Max. flow, galUS/min	400	800	1,200
Max. pressure, psi	25,000	25,000	25,000

*Between 302-329 degF [150-165 degC], refer to high temperature refurbishment guidelines for post-run maintenance.

slb.com/GeoSphereHD

GeoSphere 360

3D reservoir mapping-while-drilling service

Applications

- Multidimensional mapping of the fullness of the reservoir environment in real-time
- 3D reservoir steering
- Water zone detection and avoidance
- Drilling risk mitigation
- Optimize field development plan and sidetrack planning
- Precise landing of wells
- Reduction in rig emissions for appraisal and development wells

Features

- Real-time 2D transverse inversion on demand
- Real-time 3D volumetric reservoir mapping and steering
- New calibrated 3D EM measurements
- End-to-end digital workflow on cloud or premises
- Proven reservoir-steering workflow in DELFI environment and on Petrel platform

Benefits

- Improved production
- Accurate reserve in place evaluation
- Optimized completion design
- Extend field life
- Eliminate appraisal wells and pilot holes

Operating specifications			
	475	675	825
Hole size, in	5 5/8 – 6 3/4	8⅜ – 10⅝	10 1/2 –14 3/4
Max. operating temperature, degF [degC]	302 [150] *	302 [150] *	302 [150] *
Max. tool curvature, °/100 ft	15 – Rotating	8 – Rotating	7 – Rotating
	30 – Sliding	16 – Sliding	14 – Sliding
Max. flow, galUS/min	400	800	1,200
Max. pressure, psi	25,000	25,000	25,000

*Between 302-329 degF [150-165 degC], refer to high temperature refurbishment guidelines for post-run maintenance.

slb.com/GeoSphere360

IriSphere

Look-ahead-wile-drilling service

Applications

- Vertical and deviated wells
- Improved casing seat selection
- Salt navigation
- Optimized coring location
- Ahead-of-the-bit detection of
  - Formation tops
  - Early pressure transition
  - Formation stringers
  - Fluid contact

Features

- Higher drilling efficiency
- Lower risk and reduced contingencies
- Proactive hazard management and avoidance
- Improved casing sections through reduction, optimization, or elimination
- Increased ROP
- Fewer BHA trips out of hole

Benefits

- Increase potential production and recovery rates
- Unlock access to new or marginal reserves
- Minimize water production
- Avoid drilling hazards
- Estimate reserve with greater accuracy
- Reduce number of pilot holes
- Eliminate geological sidetracks
- Refine seismic interpretation

Operating specifications			
	475	675	825
Hole size, in	5 5/8 – 6 3/4	8¾ – 10⅝	101/2 –143/4
Max. operating temperature, degF [degC]	302 [150]	302 [150]	302 [150]
Max. tool curvature, °/100 ft	15 – Rotating 30 – Sliding	8 – Rotating 16 – Sliding	7 – Rotating 14 – Sliding
Max. flow, galUS/min	400	800	1,200
Max. pressure, psi	25,000	25,000	25,000

slb.com/IriSphere

arcVISION

Array resistivity compensated service

Applications

- → Real-time quantitative formation evaluation
- → Well-to-well correlation
- → Well placement

Features

- → 20 multidepth borehole compensated resistivity curves
- → 2MHZ and 400kHZ measurements
- → Phase and attenuation measurements
- → High vertical resolution
- → Gamma ray, Annular pressure while drilling
- → Phase caliper in WBM
- → Real-time data using MWD service
- → HP and HTHP options available

Benefits

- → Hydrocarbon reserve estimation
- → Mud invasion profile
- → Thin bed reservoir evaluation
- → Identification of anisotropic zone
- → High measurement redundancy
- → Very long track record, excellent reliability

Operating specifications			
	675	825	900
Hole size, in	8 1/4 – 9 7/8	10 1/2 –14 3/4	10 1/2 –14 3/4
Max. operating temperature, degF [degC]	302 [150] HT option 350 [175]	302 [150] HT option 350 [175]	302 [150] HT option 350 [175]
Max. tool curvature, °/100 ft	8 – Rotating 16 – Sliding	7 – Rotating 14 – Sliding	7 – Rotating 12 – Sliding
Max. flow, galUS/min	800	1,200	1,200
Max. pressure, psi	25,000 HP option 30,000	25,000	25,000

slb.com/arcVISION

OmniSphere RGM

Slimhole petrophysics evaluation-while-drilling service

Applications

- → Directional drilling and formation evaluation in slim holes
- → Harsh and complex drilling environments
- → Casing while drilling (CWD)

Features

- → Real-time continuous and static direction and inclination surveying
- → Azimuthal gamma ray
- → Ten multidepth resistivities
- → Corrosion-resistant drill collar option
- → Reinforced mechanical and electronic firmware for enhanced durability
- → The QuikSurvey* continuous-circulation directional survey service
- → Optional shock resistance feature with enhanced electronics packaging

Benefits

- → Reduces surveying time
- → Improves the reliability of the integrated MWD
- → Mitigates borehole instability risk and stuck pipe
- → Endures severe shock and corrosive muds
- → Eliminates need to alter flow rate to enable static direction and inclination survey

Operating specifications	
	475
Hole size, in	5 3/4 – 6 3/4
Max. operating temperature, degF [degC]	350 [175]
Max. tool curvature, °/100 ft Dual Telemetry	15 – Rotating 25 – Sliding
Max. flow, galUS/min	375
Max. pressure, psi	20,000 25,000

slb.com/OmniSphereRGM

adnVISION

Azimuthal density neutron service

Applications

- → Applicable to any hole deviation
- → Formation evaluation
- → Formation dip
- → Fault identification
- → Thin-bed identification
- → Caliper applications

Features

- → Azimuthal density , PEF, and neutron porosity
- → Measurement of downhole shock and rpm
- → Borehole imaging (density and PEF)
- → 3D density-caliper and image-derived-density
- → Borehole-invariant porosity
- → Slick or stabilized collar

Benefits

- → Wireline retrievable radioactive source and data
- → HP option available

Operating specifications			
	675	825	825s
Hole size, in	8 1/4 – 9 7/8	10 1/2 – 17 1/2	12 1/4
Max. operating temperature, degF [degC]	302 [150]	302 [150]	
Max. tool curvature, °/100 ft	8 – Rotating 16 – Sliding	7 – Rotating 14 – Sliding	4 – Rotating 12 – Sliding
Max. flow, galUS/min	800	1,200	1,000 High flow option available
Max. pressure, psi	30,000	30,000	18,000 HP option 25,000

slb.com/adnVISION

OmniSphere DN

Slimhole petrophysics evaluation-while-drilling service

Applications

→ High quality measurements in any formation, any hole deviation
→ Formation evaluation
→ Formation dip
→ Fault identification
→ Thin-bed identification
→ Caliper applications
→ Low-porosity
→ High-end density rocks incl. tight carbonates, limestones, and anhydrite

Features

→ Ruggedized electronics
→ Azimuthal density , PEF and neutron porosity
→ Measurement of downhole shock and rpm
→ Borehole imaging (density and PEF)
→ 3D density-caliper and image-derived-density
→ Borehole-invariant porosity
→ Slick or stabilized collar

Benefits

→ Wireline retrievable radioactive source and data
→ HT option available

Operating specifications	
	475
Hole size, in	5 3/4 – 6 3/4
Max. operating temperature, degF [degC]	302 [150] HT option 350 [175]
Max. tool curvature, °/100 ft	15 – Rotating 30 – Sliding
Max. flow, galUS/min	400
Max. pressure, psi	25,000

slb.com/OmniSphereDN

EcoScope

Multi-function logging-while-drilling service

Applications

- Drilling optimization
- Formation evaluation
- Well placement

Features

- Drilling and formation evaluation sensors located in one collar
- Formation evaluation measurements of elemental capture spectroscopy, sigma, porosity, gamma ray, and resistivity
- Drilling performance measurements of annular pressure, caliper, and shock
- Electrical generation of more neutrons with higher energies than traditional chemical sources
- Built-in diagnostic chips to provide information for preventative maintenance
- EcoView™ integrated petrophysical interpretation system for data integration and interpretation

Benefits

- Drilling and formation evaluation sensors located in one collar
- Formation evaluation measurements of elemental capture spectroscopy, sigma, density/porosity, PEF, gamma ray, and resistivity
- Drilling performance measurements of annular pressure, caliper, and shock
- Electrical generation of more neutrons with higher energies than traditional chemical sources
- Built-in diagnostic chips to provide information for preventive maintenance
- EcoView* integrated petrophysical interpretation system for data integration and interpretation

Operating specifications	
	675
Hole size, in	8 3/8 – 9 7/8
Max. operating temperature, degF [degC]	302 [150] HT option 350 [175]
Max. tool curvature, °/100 ft	8 – Rotating 16 – Sliding
Max. flow, galUS/min	800
Max. pressure, psi	20,000

*Japan Oil, Gas and Metals National Corporation (JOGMEC), formerly Japan National Oil Corporation (JNOC), and Schlumberger collaborated on a research project to develop LWD technology that reduces the need for traditional chemical sources. Designed around the pulsed neutron generator (PNG), NeoScope service uses technology that resulted from this collaboration. The PNG and the comprehensive suite of measurements in a single collar are key components of the NeoScope service that deliver game-changing LWD technology.

slb.com/EcoScope

NovoSphere

Sourceless formation evaluation logging-while-drilling service

Applications

- Conventional and unconventional reservoirs
- Environmentally sensitive drilling
- Long horizontal wells
- Well abandonment and sidetracking

Benefits

- Safer and sustainable
- Improved accuracy and range
- Operational efficiency

Features

- Provides improved accuracy and extended measurement ranges of sourceless density measurements across a variety of lithologies including complex carbonate, sandstone, and shales
- Reduces regulatory complexities during fishing, sidetracking, or abandonment procedures
- Simplifies operations by eliminating the need for certified logistics to handle radioactive sources
- Minimizes rathole drilling and reduces rig time with a compact design that integrates multiple measurement functions within a single collar
- Provides high-quality formation evaluation data in real time, enabling operators to make rapid and informed decisions to optimize well placement and improve drilling efficiency

Operating specifications	
	675
Hole size, in	8 1/2
Max. operating temperature, degF [degC]	302 [150]
Max. tool curvature, °/100 ft	8 – Rotating 16 – Sliding
Max. flow, galUS/min	800
Max. pressure, psi	20,000

slb.com/NovoSphere

proVISION Plus

Magnetic resonance-while-drilling service

Applications

- → Continuous, real-time, lithology independent porosity without chemical sources
- → Continuous, real-time, permeability evaluation
- → Resistivity independent pay identification
- → Thin bed and carbonate facies characterization
- → Irreducible water saturation
- → Gas-bearing reservoir evaluation
- → Heavy oil and tar identification

Features

- → Real-time, continuous measurement of T2 distribution
- → Calculation from T2 distribution of continuous permeability, lithology-independent porosity, producible and irreducible fluid volumes, and pore size distribution
- → Turbine power to eliminate trips to replace batteries
- → Single-sleeve stabilizer that minimizes motion without affecting tendency
- → Ability to be placed anywhere in BHA

Benefits

- → Optimizes well placement to maximize well productivity
- → Enhances perforation and stimulation design
- → Provides pore size distribution to assess reservoir storage and flow capacity
- → Saves rig time through early formation evaluation
- → Prevents plug-and-abandon and sidetrack decisions by avoiding water-cut situations

Operating specifications		
	675	825
Hole size, in	8 3/8 – 10 5/8	10 1/4 – 12 5/8
Max. operating temperature, degF [degC]	302 [150]	302 [150]
Max. tool curvature, °/100 ft	8 – Rotating 16 – Sliding	7 – Rotating 14 – Sliding
Max. flow, galUS/min	800	1,200
Max. pressure, psi	20,000	20,000
Power supply	Turbine	Turbine

slb.com/proVISIONPlus

MagniSphere

High-definition NMR logging-while-drilling service

Applications

- → Advanced LWD applications
- → Carbonate and complex siliclastic formations
- → Complex porosity/permeability profile
- → Fluid producibility analysis
- → Gas characterization
- → Advanced application such as rock typing and grain size evaluations
- → Source-less porosity

Features

- → Simultaneous T1 and T2 distribution
- → Automated data delivery process
- → Dynamic processing allowing ROP up to 150 ft/hr
- → Downhole pulse auto-tunning allowing tolerance to highly saline muds
- → Dual stabilizer and new front end electronic to reduce sensitivity to lateral motion

Benefits

- → Accurate petrophysical analysis of complex reservoirs
- → Consistent characterization of a wider range of fluid type and rock fabrics
- → Producibility analysis for reservoir modelling, completion placement or any real time application
- → Does not slow down drilling operations
- → In depth reservoir fluid and rock analysis thanks to advanced answer products

Operating specifications	
	475
Hole size, in	5 7/8 – 6 3/4
Max. operating temperature, degF [degC]	302 [150]
Max. tool curvature, °/100 ft	15 – Rotating 30 – Sliding
Max. flow, galUS/min	400
Max. pressure, psi	25,000
Power supply	Turbine

slb.com/MagniSphere

StethoScope

Formation pressure-while-drilling service

Applications

- → Drilling optimization
- → Formation evaluation
- → Well placement
- → Completion design optimization

Features

- → Real-time formation pressure and mobility
- → Fully adjustable testing options including time-optimized pretesting (TOP)
- → High-resolution pumps-on and pumps-off measurements with QC indicators
- → High precision and accuracy ACQG Quartz gauge

Benefits

- → Saves time and cost through elimination of tool orientation
- → Improves prediction of reserves completion, and perforation decisions
- → Enhances drilling performance through optimal mud weight
- → Minimizes nonproductive time using TOP

Operating specifications			
	475	675	825
Hole size, in	5 5/8 - 7 3/8	81/2 – 97/8	101/2 –143/4
Max. operating temperature, degF [degC]	302 [150] 330 [165]	302 [150] 330 [165]	302 [150] 330 [165]
Max. tool curvature, °/100 ft	15 – Rotating 30 – Sliding	8 – Rotating 16 – Sliding	7 – Rotating 13 – Sliding
Max. flow, galUS/min	400	800	1,200
Max. pressure, psi	20,000 (optional for all sizes) 30,000 (optional for all sizes)	20,000 (optional for all sizes) 30,000 (optional for all sizes)	20,000 (optional for all sizes) 30,000 (optional for all sizes)

slb.com/StethoScope

SpectraSphere

Fluid mapping-while-drilling service

Applications

- → Reservoir fluid characterization
- → Identification of compartments and lateral sealing boundaries
- → Geosteering and well placement
- → Formation testing in complex well profiles, including extended-reach drilling and deepwater operations
- → Field development planning

Features

- → Advanced downhole reservoir fluid analysis, including
  - Hydrocarbon fluid composition (C_1, C_2, C_3, C_4, C_5, C_6, CO_2)
  - GOR, Fluid typing, Fluid fractions
  - Fluid resistivity and temperature
- → Real-time monitoring of mud filtrate contamination, fluid property changes, and system performance
- → H_2S resistant flowline along with coupons at probe inlet to estimate H_2S concentration
- → Dedicated pretest module with high-precision Axton dynamically compensated single quartz gauge, automated time-optimized pretests, and pumps-off measurement capability
- → Electromechanical displacement unit with precise control of drawdown rates

Benefits

- → Facilitates early reservoir development decisions and production optimization
- → Improves reservoir understanding through deep insight into fluid composition and distribution
- → Enables productivity steering in development wells
- → Mitigates risk in challenging environments
- → Saves operating costs by streamlining well construction and reducing flat time

Operating specifications	
	675
Hole size, in	$8^1/_2$ – $10^1/_2$ in
Max. operating temperature, degF [degC]	302 [150] HT option 350 [175]
Max. tool curvature, °/100 ft	8 – Rotating 16 – Sliding
Max. flow, galUS/min	800
Max. pressure, psi	25,000

slb.com/SpectraSphere

OmniSphere SGR

Slimhole petrophysics evaluation-while-drilling service

Applications

- → Conventional and unconventional reservoir drilling
- → High-angle horizontal drilling
- → Clay typing and lithology

Features

- → Real-time uranium, thorium, potassium, total gamma-ray, and uranium-free gamma ray
- → Total organic carbon
- → Automated environmental corrections in real-time (for borehole potassium)
- → Sourceless and batteryless operations

Benefits

- → Aids formation evaluation and completion decisions in real-time in complex reservoirs
- → Enhances reservoir evaluation by correctly identifying clay volume in pay containing radioactive nonclay minerals
- → Guides and geosteering in unconventional pay
- → Saves rig time through early formation evaluation

Operating specifications	
	475
Hole size, in	$5^{5}/_{8}$ - 7
Max. operating temperature, degF [degC]	302 [150]
Max. tool curvature, °/100 ft	15 – Rotating 30 – Sliding
Max. flow, galUS/min	400
Max. pressure, psi	25,000

slb.com/OmniSphereSGR

TerraSphere

High-definition dual-imaging-while-drilling service

Applications

- → Geosteering: sourceless steering in OBM, pressure and sampling point selection, completion optimization
- → Geology: structural and sedimentological analysis and fracture characterization
- → Geomechanics
- → Drilling optimization

Features

- → Dual physics (resistivity and ultrasonic) high-definition images in OBM (<1 in) in one single collar
- → Novel compression for real-time transmission
- → Wide range of operating environments
- → High-definition 360° caliper for detailed borehole shape
- → Wideband of resistivity and ultrasonic data to enable robust acquisition
- → Novel design enables full borehole coverage over large ROP and rpm ranges
- → Battery-less operation enhances safety
- → Interpretation and visualization of data available in Techlog wellbore software platform, Petrel* EandP software platform, and other platforms

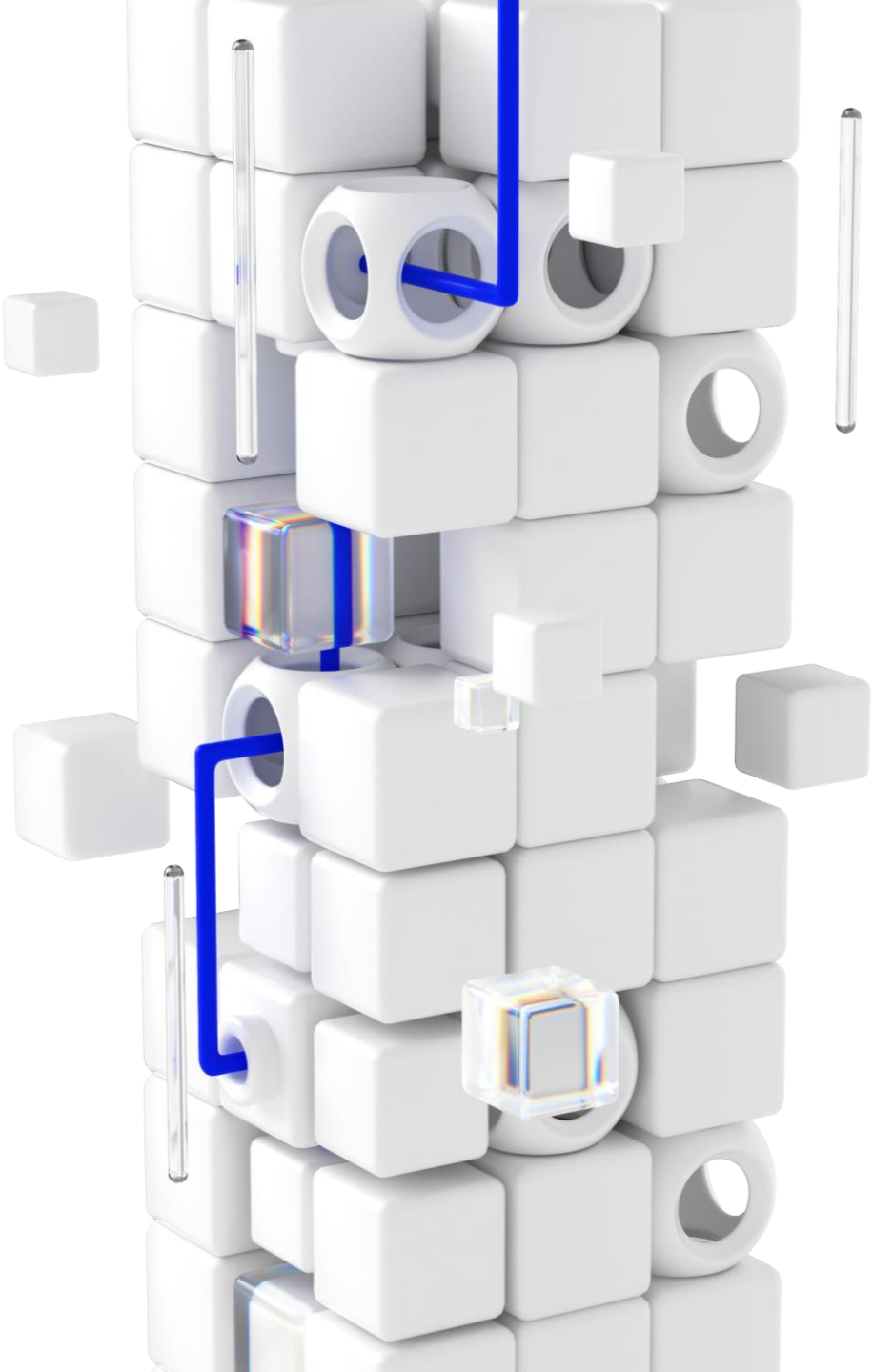
Benefits

- → Enhances geosteering and maximizes potential production
- → Optimizes drilling operations
- → Improves reservoir understanding
- → Saves rig time and cost

Operating specifications	675
Hole size, in	$8^{3}/_{8} – 9^{7}/_{8}$*
Max. operating temperature, degF [degC]	302 [150]
Max. tool curvature, °/100 ft	8 – Rotating 16 – Sliding
Max. flow, galUS/min	800
Max. pressure, psi	30,000

*Up to 14 in for Ultrasonic Imaging

slb.com/TerraSphere



CTDirect Portfolio

CTDirect

Coiled tubing directional drilling system

Applications

- → Vertical, deviated and horizontal coiled tubing drilling applications
- → Underbalanced and overbalanced drilling
- → Multilateral reentry wells: up to 40°/100 ft dogleg trajectories
- → Thru-tubing drilling
- → Harsh drilling environments
  - → High temperature, High shock and vibration

Features

- → Compatible with motor or turbine
- → Precise toolface control while drilling
  - → 410° bidirectional orientation
- → Dual BHA disconnect mechanisms
- → Multiple pressure barriers
- → High speed e-Line telemetry
- → Real-time downhole measurements
  - → Toolface, direction and inclination ,
  - → Torque-on-bit (TOB) and weight-on-bit (WOB)
  - → Natural gamma ray
  - → Internal and annular pressure, internal and external temperature, shocks, and vibrations

Benefits

- → Maximizes reservoir contact, Improves production potential in reentry wells
- → Increases ROP in underbalanced applications
- → Eliminates cost of removing completions
- → Avoids risk of taking well offline during reentry drilling
- → Enables better geosteering with full 3D directional capability
- → Lowers maintenance cost and service turnaround time

Operating specifications	3.125
Hole size, in	$3^{5}/_{8}$ - $4^{3}/_{4}$
Max. operating temperature, degF [degC]	350 [175]
Max. tool curvature, °/100 ft	40
Max. flow, galUS/min	130
Max. internal pressure, psi	15,000
Max. annular pressure, psi	10,000

slb.com/CTDirect

CTDirect MWD

Coiled tubing measurement-while-drilling service

Applications

- → Vertical, deviated and horizontal coiled tubing drilling applications
- → Underbalanced and overbalanced drilling
- → Multilateral reentry wells: up to 40°/100 ft dogleg trajectories
- → Thru-tubing drilling
- → Harsh drilling environments
  - High temperature, High shock and vibration

Features

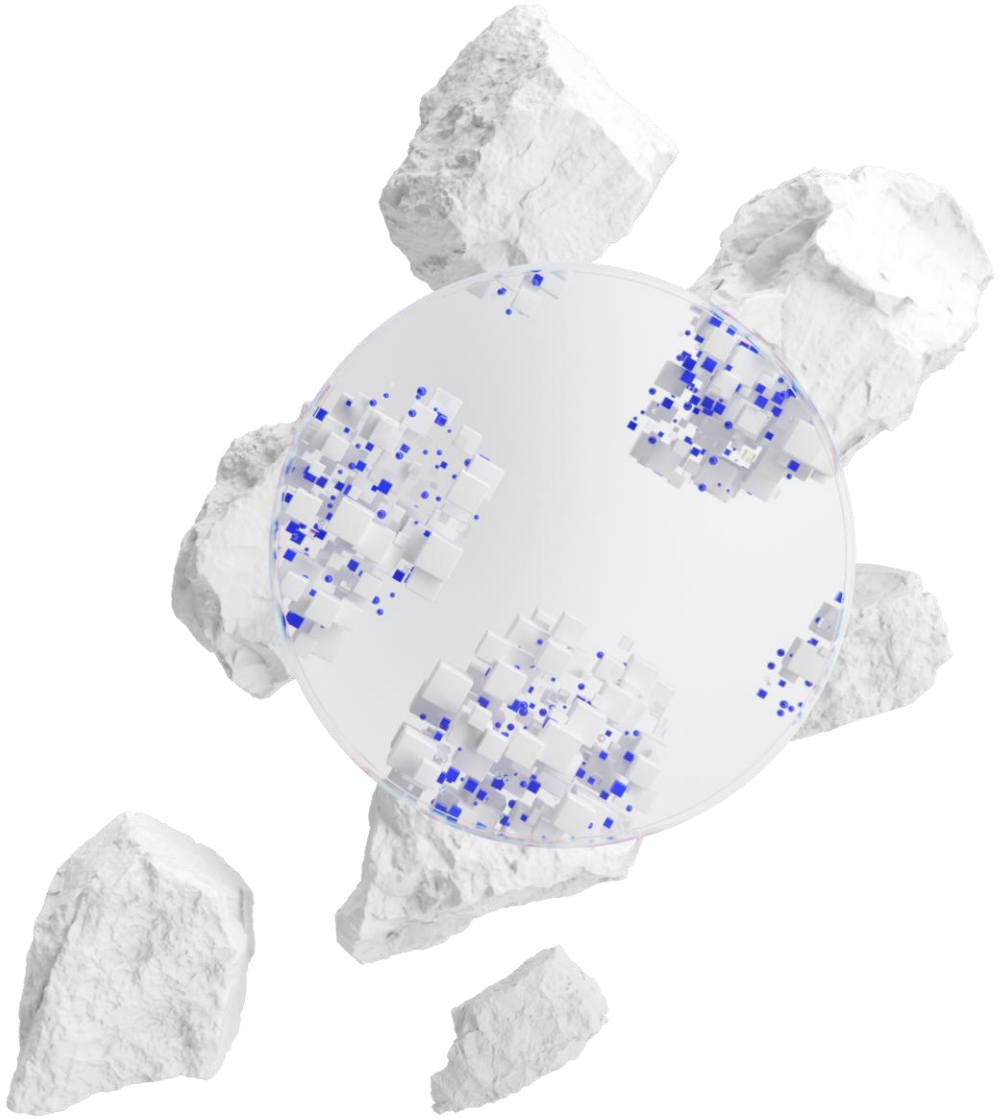
- → High speed e-Line telemetry
- → Real-time downhole measurements
  - Toolface, direction and inclination
  - Torque-on-bit (TOB) and weight-on-bit (WOB)
  - Natural gamma ray
  - Internal and annular pressure
  - Internal and external Temperature
  - Shocks and vibrations
- → Compatible with CTDirect BHA

Benefits

- → Maximizes reservoir contact
- → Improves production potential in reentry wells
- → Increases ROP in underbalanced applications
- → Eliminates cost of removing completions
- → Avoids risk of taking well offline during reentry drilling
- → Enables better geosteering with full 3D directional capability
- → Lowers maintenance cost and service turnaround time

Operating specifications	3.125
Hole size, in	$3^{5}/_{8}$ - $4^{3}/_{4}$
Max. operating temperature, degF [degC]	350 [175]
Max. tool curvature, °/100 ft	40
Max. flow, galUS/min	130
Max. internal pressure, psi	15,000
Max. annular pressure, psi	10,000

slb.com/CTDirectMWD



Surface Logging Portfolio

GN5 service

Mud Logging surface data acquisition service

Applications

- → Oil and Gas, development, exploration, PandA, workover, offshore and onshore (single or dual gradient derricks), all well types
- → Geothermal and CCUS

Features

- → Full suite of surface sensors installed around the rig providing redundancy and a mirroring system for the rig sensors to minimize lost data and to avoid NPT in real-time
- → Servers to record the data, run the processes and create time and depth database
- → Workstations to monitor, create and generate the deliverables
- → Geology components: Microscope, Fluorescence, Oven and Chemicals
- → Gas equipment: Extractor(s) and analyser(s)
- → Rig Floor display to provide information to the driller
- → High-frequency surface drilling data acquisition and processing (1-50hz)
- → Enhanced well monitoring through an advanced alarm management
- → Semi-automatization of deliverables for data quality and consistency
- → Intuitive interface for proactive well monitoring
- → Standard lithology monitoring for geological formation
- → Standard gas monitoring to identify oil and gas zone
- → WITSML1.3 and 1.4

Benefits

- → Reduce COSD through remote capabilities
- → Improve quality through smart monitoring applications
- → Fit for purpose mud logging platform through options and advanced services on top

Operating specifications	
Hardware	Server - PowerEdge R440 or R450 Rack Server Workstations: - Format: Mini tower or Tower INI TOWER or TOWER - Processor : Quad core 8MB / 8T / 3.4 GHZ / 65W at minimum - Ram Memory : 8GB RAM - Hard disk : 500GB SDD - Ethernet Socket : Quantity 1 - Video Port : 1 VGA (Compulsory), 1 HDMI - Com port RS232 - PCIe Slots : 2 at minimum
Software	OS Server – Windows Server 2022 OS Workstation – Windows 10
Database system	2008 SQL Database software
Gas system supported	GFF / Reserval PureFlex, FlairFlex DQ1000, UTG
Data transmission protocol supported	WITS “0”, WITSML 1.3 and 1.4 ETP 1.0
Certification	CE, ATEX

slb.com/MudLogging

Gen6

Mud Logging surface data acquisition service

Applications

- → Oil and Gas, development, exploration, PandA, workover, offshore and onshore (single or dual gradient derricks), all well types
- → Geothermal and CCUS

Features

- → Full suite of surface sensors installed around the rig providing redundancy and a mirroring system for the rig sensors to minimize lost data and to avoid NPT in real-time
- → Servers to record the data, run the processes and create time and depth database
- → Workstations to monitor, create and generate the deliverables
- → Geology components: Microscope, Fluorescence, Oven and Chemicals
- → Gas equipment: Extractor(s) and analyser(s)
- → Rig Floor display to provide information to the driller
- → High-frequency surface drilling data acquisition and processing (1-50hz)
- → Ability to connect a maximum of 240 Sensors
- → Fully compliant with the last generation of certification (CE, RoHs, IECEx, Atex and Norsok)
- → Remote control and monitoring through web applications
- → System managing connection several, WITSML 1.3.1.1 and 1.4.1.1 and ETP
- → Time and depth data replication managed by the system

Benefits

- → New digital mud logging platform: a single system for all levels of service with full Hardware/Software backup system
- → Mud gas advisor for gas data QC, standard deliverables and automated gas data recommendations
- → Drill safer with Quality Assurance (QA) monitoring and alarms
- → Standardization of reporting including log deliverables
- → Reduced NPT linked to drilling events
- → Site specific communication plan implemented in the system

Operating specifications	
Hardware	Server - PowerEdge R440 or R450 Rack Server Workstations: - Format: Mini tower or Tower INI TOWER or TOWER - Processor : Quad core 8MB / 8T / 3.4 GHZ / 65W at minimum - Ram Memory : 8GB RAM - Hard disk : 500GB SDD - Ethernet Socket : Quantity 1 - Video Port : 1 VGA (Compulsory), 1 HDMI - Com port RS232 - PCIe Slots : 2 at minimum
Software	OS Server – Windows Server 2022 OS Workstation – Windows 10
Database system	2017 SQL Database software
Gas system supported	GFF / Reserval PureFlex, FlairFlex DQ1000, UTG
Data transmission protocol supported	WITS “0”, WITSML 1.3 and 1.4 ETP 1.0
Certification	CE, ATEX IECEx, Norsok, RoHs

slb.com/MudLogging

FLAGHD - Coriolis

Fluid loss and gain detection service

Applications

- → Early kick detection of influx and loss in deep and ultradeep water operations, exploration wells, HPHT wells, and narrow mud weight windows
- → MPD, EC-Drill®, and conventional systems

Features

- → Rig flow system monitoring and modelling
- → Identification of ballooning effect
- → Drilling fluid displacement monitoring
- → Second well control barrier
- → Automated alert system displaying traffic light output for quick reaction

Benefits

- → Reduce the NPT linked to wellbore balance events
- → Minimize influx volumes to remain below the kick tolerance
- → Decrease invisible lost time during connections
- → Optimize lost circulation material effectiveness

Operating specifications	CMF HC3	CMF HC4
Measurement method	Coriolis effect	Coriolis effect
Sensor type	Emerson CMF HC43	Emerson CMF HC4
Transmitter model	MVD 2500	MVD 2500
Fittings diameter	10 inches	12 inches
Power supply	24VDC – 5W	24VDC – 5W
Flow	Output 4–20mA Measure range 0–4200 L/min Accuracy +/-0.10% full scale	Output 4–20mA Measure range 0–6000 L/min Accuracy +/-0.10% full scale
Density	Output 4–20mA Measure range 0–5000 kg/m^3 Accuracy +/-0.5 kg/m^3	Output 4–20mA Measure range 0–3000 kg/m^3 Accuracy +/-0.5 kg/m^3
Safety standard	IS	IS
Ex marking	II 2G EEx ib IIB T1–T5	II 2G EEx ib IIB T1–T5

slb.com/FLAG

FLAGHD – Electro magnetic

Fluid loss and gain detection in real-time service

Applications

→ Early kick detection of influx and loss in deep and ultradeep water operations, exploration wells, HPHT wells, and narrow mud weight windows
→ MPD, EC-Drill®, and conventional systems

Features

→ Rig flow system monitoring and modelling
→ Identification of ballooning effect
→ Drilling fluid displacement monitoring
→ Second well control barrier
→ Automated alert system displaying traffic light output for quick reaction

Benefits

→ Reduce the NPT linked to wellbore balance events
→ Minimize influx volumes to remain below the kick tolerance
→ Decrease invisible lost time during connections
→ Optimize lost circulation material effectiveness

Operating specifications	8-in Flowmeter	10-in Flowmeter
Power supply	24VDC – 15W	24VDC – 15W
Output signal	4–20 mA	4–20 mA
Measurement up to (at 2.5% m/s)	300 m^3/h (5000 L/min)	500 m^3/h (8300 L/min)
Process pressures up to		10 bar (standard) 40 bar (optional)
Accuracy	+0.2% full scale	+0.2% full scale
Working temperature (PTFE)	–20 to 130 degC	–20 to 130 degC
Ingress protection	IP68	IP68
Safety standard	IS	IS
Ex marking	EEx ia IIB/IIC T1–T6	EEx ia IIB/IIC T1–T6

slb.com/FLAG

CLEAR

Hole cleaning and wellbore risk reduction service

Applications

→ Extended-reach drilling and highly deviated wells
→ Horizontal and multi-lateral wells
→ Deepwater wells

Features

→ Real-time physical measurement of weights of solids/material falling from the rig shale shaker to evaluate cutting transport behaviour
→ Evaluation of weight, volume and flow of cutting return
→ Digital and graphical display showing actual weights versus modelled
→ Cutting recovery per stand and rig activity

Benefits

→ Prevent Stuck Pipe and LIH events due to poor hole cleaning
→ Optimizing wellbore cleaning practices to reduce flat time
→ Maximize footage per hour without compromising hole cleaning

Operating specifications	
Hardware	Cuttings flow meter (3.1)
Length	1.854 m (6.083 ft)
Width	0.501 m (1.644 ft)
Height	Minimum:1.043 m (3.422 ft)
	Maximum:1.103 m (3.619 ft)
Net Weight	145 kg (320 lb)
Length	1.854 m (6.083 ft)
Width	0.501 m (1.644 ft)
Height	Minimum : 1.043 m (3.422 ft)

slb.com/CLEAR

OptiWell

Well construction performance service

Applications

- → Oil and Gas, development, exploration, PandA, workover, offshore and onshore (single or dual gradient derricks)
- → Geothermal and carbon capture, utilization, and sequestration applications
- → Performance Live Center

Features

- → Dedicated centres of OptiWell engineers either in customer office or in SLB performance live centers
- → Advanced monitoring and comparison of drilling versus real-time drilling models
- → Analysis of drilling events, including insights, alerts and lessons learned
- → Preparation for drilling and tripping roadmaps
- → Monitoring and analysing drilling key performance indicators (KPIs) based on historical well analysis.
- → Real-time visualization of data compared to models accessible through both web and mobile phone

Benefits

- → Increased drilling performance and consistency
- → NPT and ILT analysis for flat-time reduction and improved well performance
- → Collaborative communication between wellsite and office
- → Informed customer decision making
- → Data consistency, storage on a centralize technologies and space

Operating specifications	
Hardware	Workstations: - Format : Mini tower or Tower INI TOWER or TOWER or Laptop - Processor : Quad core 8MB / 8T / 3.4 GHZ / 65W at minimum - Ram Memory : 8GB RAM - Hard disk : 500GB SDD - Ethernet Socket: Quantity 1 - Video Port : 1 VGA (Compulsory), 1 HDMI - Com port RS232 - PCIe Slots : 2 at minimum
Software	OS Workstation – Windows 11 SLB Suites covering : - Technical Drilling interpretation - Drilling Dynamics interpretation - Unified Solution

slb.com/OptiWell

PreVue

Pore pressure analysis service in real-time

Applications

→ Exploration wells
→ HPHT Wells
→ Narrow mud weight windows
→ Ultra and deepwater wells
→ Wells with poor or no seismic data

Features

→ Pre-drill studies using offset well data to develop pore pressure models
→ Real-time evaluation while drilling of normal hydrostatic pressure, overburden, pore pressure, and fracture gradients
→ Discrete pressure compartment analysis to better understand pore pressure envelope shifts at bedding interfaces
→ Corrected d-exponent analysis for evaluation of pore pressure gradient

Benefits

→ Safer well trajectory and better well control
→ Enhances drilling efficiency and reduced NPT

Operating specifications	
Hardware	Workstations: - Format: Mini tower or Tower INI TOWER or TOWER or Laptop - Processor : Quad core 8MB / 8T / 3.4 GHZ / 65W at minimum - Ram Memory:8GB RAM - Hard disk : 500GB SDD - Ethernet Socket: Quantity 1 - Video Port : 1 VGA (Compulsory), 1 HDMI - Com port RS232 - PCIe Slots : 2 at minimum
Software	OS Workstation – Windows 11 SLB Suites covering: - Pore pressure prediction interpretation -Basic wellbore stability interpretation

slb.com/PreVue

FlairFlex

Advanced real-time fluids logging and analysis service

Applications

→ Provides fluid characterization in extended reach drilling environments
→ Enables safer drilling in H2 zones and gas caps
→ Handles uncertainties in mature fields
→ Addresses complex reservoir features

Features

→ Characterizes reservoir fluid while drilling
→ Optimizes pressure and sampling points selection
→ Reduces rig time and costs
→ Minimizes operational risk

Benefits

→ Provides crucial information before downhole sampling or well testing is possible
→ Optimizes formation testing, sampling, and downhole fluid analysis
→ Characterizes reservoir fluid independently of drilling fluid, wellbore geometry, temperature, and pressure
→ Provides zero-operational-risk formation evaluation
→ Reduces rig time and cost

Operating specifications	
Extractor Type	Constant Volume Heated
Extractor heating temperature	70 degC [158 degF] WBM; 90 degC [194 degF] OBM
Gas line pressure	Near vacuum
Gas analyzer type	Gas Chromatograph-Mass Spectrometer
Analysis cycle time	70" C1-C7, 90" C1-C8
Gas measured	C1-C8, Benzene, Toluene, Methylcyclohexane, C6 isomers, H2, He, CO_2
Limit of Detection	1 ppm

slb.com/FlairFlex

PureFlex

Surface fluids logging while-drilling service

Applications
→ Oil and Gas, development, exploration, offshore and onshore
→ HPHT, deepwater

Features
→ Prevent false positive hydrocarbon indications
→ Optimize completions program
→ Reduce downhole sampling
→ Extend bit life and reduce risk of fishing
→ Secure investment return on Isotope/IsoTubes analysis
→ Measures Total Gas, C1-C5, ethene and propene
→ Fast gas analysis (20")
→ Alcohols and amines removal
→ Perfect C1–C2 separation
→ Remotely accessible and controlled
→ Modular design
→ Measure drill bit metamorphism in real-time

Benefits
→ Enhances depth resolution
→ Improves data quality
→ Identifies bit fatigue
→ Eases deployment
→ Enables remote operations
→ Reduces hardware

Operating specifications	
Analyzer type	Gas Chromatograph FID
Gas measured	Total Gas, C1-C5, Ethane, Propane
Total Gas range	0–100%
Chromatograph range	0–60%
Analysis cycle time	20" – 40"
C1 and C2 separation	Up to 1,500
Mud contamination removal	Yes (Alcohols, amines)
Remote capabilities	Yes

slb.com/PureFlex

Isotope Logging C_1

Continuous isotopic measurement service

Applications

→ Geochemical fluid characterization
→ of conventional and unconventional reservoirs
→ Fluid sampling planning, including real-time spot
→ sample analysis optimization
→ Well placement and geosteering assistance

Features

→ Continuous collection of isotopic data during
→ drilling operations
→ Surface logging-while-drilling data
→ Capable of detecting minute variations in isotopic
→ composition
→ Delivers precise and accurate isotopic
→ measurements for reliable analysis

Benefits

→ Identifies small-scale features
→ Provides precise data on the composition
→ and properties of subsurface formations
→ Accurately distinguishes between various fluids
→ (oil, water, gas) within the reservoir
→ Enhances fluid typing, including flagging of fluid
→ alteration processes
→ Assists in optimizing recovery strategies
→ and reservoir performance
→ Delivers reliable data for making informed
→ operational decisions
→ Reduces costs by providing accurate data that
→ minimizes the need for additional exploratory
→ drilling

Operating specifications	
Analyzer type	Cavity Ring-Down Spectroscopy (CRDS)
Measurement	$\delta^{13}C$-C_1
Analysis cycle time	Continuous
Precision	1‰ above 500 ppm C_1 to 25% C_1
Contamination removal	Alcohols, ammonia, ethene, propene
Drillbit metamorphism correction	Iso-Pure application

slb.com/Isotope

Isotope Logging C_1–C_3

Real-time cogenetic hydrocarbon fluid typing

Applications

→ Onshore and o shore
→ Unconventional wells
→ CCUS

Features

→ Carbon isotope composition δ ^{13}C–C_1 , C_2 , C_3 , and CO_2 while drilling
→ 6-minute cycle time
→ 200-ppm limit of detection for C_1 , C_2 , and C_3

Benefits

→ Enhances fluid typing and properties prediction
→ Enables assessment of fluid alteration
→ mechanisms, such as mixing, biodegradation, and
→ secondary charge
→ Infer connectivity and compartmentalization
→ considering the charge history
→ Provides inputs to petroleum systems, such as
→ maturity, source rock type, and mixed charge
→ Optimizes sampling and testing program
→ Insights on the effectiveness of CO_2 sequestration
→ Data can be corrected from DBM-artifacts even
→ from IsoTubes™

Operating specifications	
Analyzer type	Gas chromatography-Isotope ratio mass spectrometry (GC-IRMS)
Measurement	$\delta^{13}C$ of C_1, C_2, C_3, and CO_2
Analysis cycle time	3 minutes for C_1–C_2 and 6 minutes for C_1–C_3
Precision	1‰ at 200–2,000 ppm and 0.5‰ at 2,000 ppm to 50%
Contamination removal	Alcohols, ammonia, ethene, propene
Drillbit metamorphism correction	Iso-Pure application

slb.com/Isotope

DQ1000

Wellsite mass spectrometer gas analyzer

Applications

- → Oil and Gas, development, exploration, offshore and onshore
- → HPHT, deepwater
- → Thin bed reservoirs, low resistivity pay, multi-stacked reservoir, unconventional, tight reservoir
- → Drilling optimization
- → Well placement

Features

- → Hydrocarbon type and quality determination
- → Pay zone, fluid contact, and water saturation delineation
- → Porosity and fracture detection
- → Sweet spot identification in unconventional reservoirs
- → Formation gas, contaminants, and bit-generated gas quantification, Bit wear monitoring
- → LAN satellite and Internet enabled
- → Depth, circulation, and pump stroke sensors
- → Dual-and single-port gas stream analysis
- → Adjustable cycle time
- → Modest size, weight, and electrical requirements
- → Water and oil-based drilling compatibility

Benefits

- → Improves detection and characterization of formation gas, even at low concentrations
- → Assesses petroleum type using a variety of species and species ratios
- → Distinguishes among high- and low-water-cut reservoirs
- → Detects fractures using unique species
- → Determines liquid-enriched intervals in unconventional reservoirs of questionable maturity
- → Provides practical data to improve well completions
- → Anticipates problematic zones (high water saturation, CO_2, sulfur species, depletion)

Operating specifications	
Analyzer type	Direct Mass Spectrometer
Gas measured	C1-C10 (alkanes, cyclohexane, aromatics), inorganics and sulfurs-bearing compound.
Cycle time	60 to 100 seconds
Remote capabilities	Yes

slb.com/DQ1000

EcoFlex

Multifactor cuttings evaluation while-drilling service

Applications

- → Oil and Gas, development, exploration, offshore and onshore
- → HPHT, deepwater
- → Chemostratigraphy
- → On-site laboratory analysis
- → Geothermal and carbon capture, utilization, and sequestration applications

Features

- → Metrology for XRD (mineralogy) and XRF (elements) with LOD and accuracy for each output
- → Measures 12 minerals common in sedimentary rocks from drilled cuttings
- → 50 inorganic elements from Sodium (Na) up to Uranium (U)
- → Spectral and Total Gamma Ray measurements on drilled cuttings
- → High resolution digital microscope to image drilled cuttings

Benefits

- → Identifies formation tops
- → Enhances steering and well placement
- → Works with any wellbore size
- → Optimizes drilling operations
- → Improves reservoir understanding
- → Saves rig time and cost

Operating specifications	HRDM	XRD	XRF
Measurement method	High Resolution Image	X-Ray Diffraction	X-Ray Fluorescence
Measurement	Digital image	Mineralogy	Inorganic elements
Variable	Digital image	Quartz, calcite, dolomite, siderite, illite, kaolinite, montmorillonite, anhydrite, pyrite, K-Feldspars, plagioclase	Major elements: Trace elements Spectral GR
Measurement time	2 min	12 min	10 min
Sample preparation	-	Manual grinding	Automatic grinding

slb.com/EcoFlex

LithoFlex

Multifactor shale-cuttings evaluation while-drilling service

Applications

- → Oil and Gas, development, exploration, offshore and onshore
- → HPHT, deepwater
- → Unconventional oil and gas applications
- → Wells with wellbore stability challenges
- → Chemostratigraphy
- → On-site laboratory analysis
- → Geothermal and carbon capture, utilization, and sequestration applications

Features

- → Infrared combo technology for mineralogy and organic
- → Mineralogy including accurate clay typing
- → TOC, kerogen maturity and density
- → 50 inorganic elements from Sodium (Na) to Uranium (U)
- → Spectral and Total Gamma Ray measurements on drilled cuttings

Benefits

- → Identify source rocks
- → Enhance steering and well placement
- → Reduce drilling challenges
- → Works with any wellbore size
- → Optimizes drilling operations
- → Improves reservoir understanding
- → Saves rig time and cost

Operating specifications	DRIFTS	XRF
Measurement method	Infrared	X-Ray Fluorescence
Measurement	Mineralogy + organics	Inorganic elements
Variable	Mineralogy : Quartz + feldspars, calcite, dolomite, illite, kaolinite, smectite, anhydrite, muscovite Organic : TOC, Kerogen maturity, Kerogen density	Major elements: Trace elements Spectral GR
Measurement time	2 min	10 min
Sample preparation	Automatic grinding Thermal cleaning	Automatic grinding

slb.com/LithoFlex

Automated Lithology

Increase your lithological accuracy and enhance well planning

Applications

→ Oil and Gas, development, exploration, offshore and onshore
→ HPHT, deepwater
→ Unconventional oil and gas
→ Wells with wellbore stability challenges
→ Geothermal and carbon capture, utilization, and sequestration applications

Features

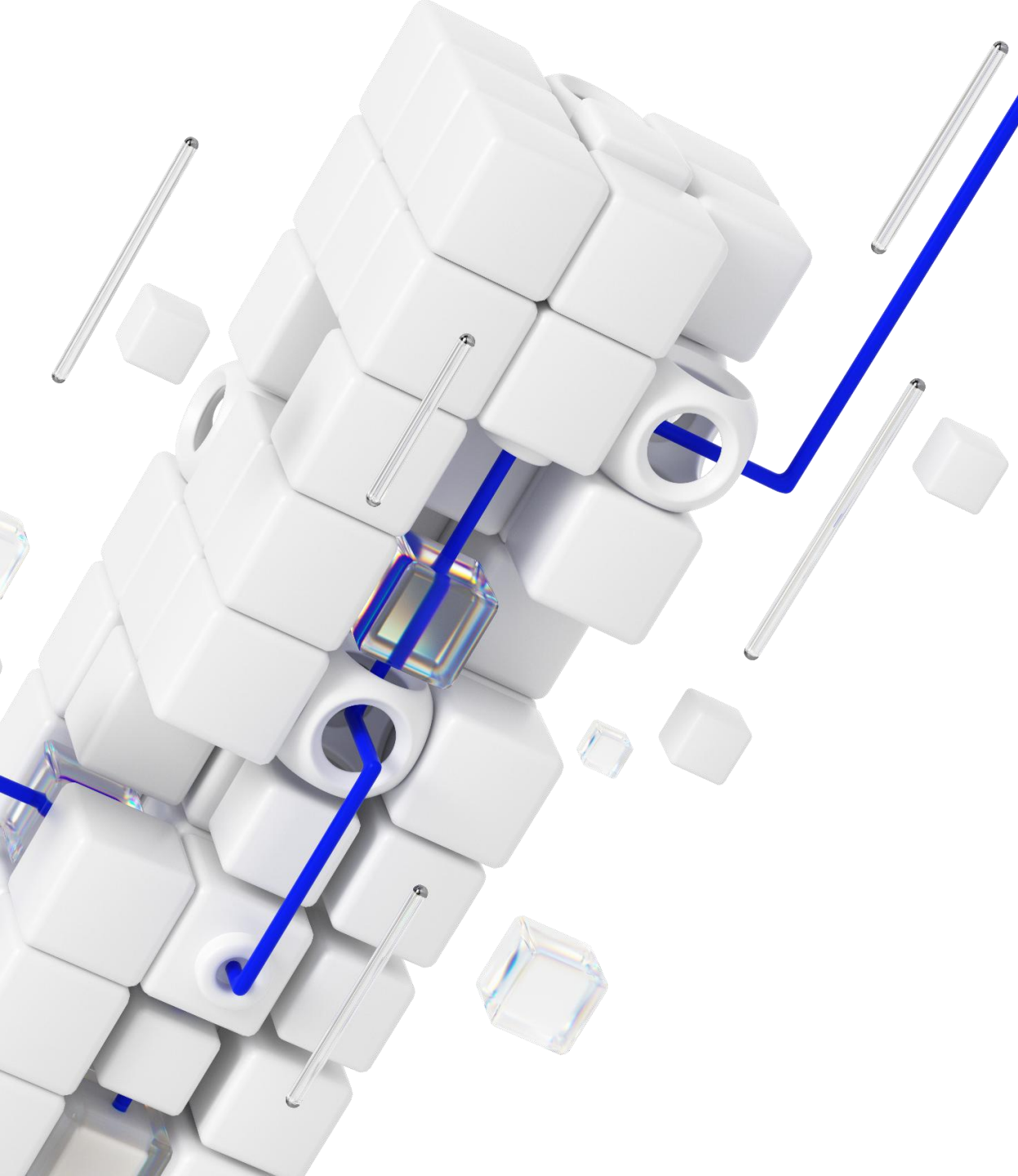
→ Dedicated color, light calibration and image QC, with metadata embedded
→ Capture high definition (HD) digital white and UV light images
→ Automated LOBAI cuttings descriptions
→ Standardized lithological description
→ Lithology description standardization through embedded geological data model
→ Lithology description digital display (rock color, grain size, grain sorting)
→ Digital lithological database created per well

Benefits

→ Enables remote operations (Mud logging SME based in town)
→ Reduces drilling and well placement risks during drilling, with enhanced interpretation
→ Minimizes geological uncertainties and stress on any type of well and lower drilling risk for decision makers
→ Reduces HSE risks with smaller POB, reduced risk of incorrect section/well TD
→ Enhances well planning by using digitalized cuttings data and improve details of geological and petrophysical models

Operating specifications		
Litholink	Digital hardware	Color and light calibrated image with QC taken under white and UV light Large field of view (100—2,000 cuttings) Resolution to 70 microns
Lithoscribe	Software	Guided lithology description Embedded data model Widget to ease description (color picker, grain size measurement) Provide digitally mobile description as text and as numerical values
Litholog	Software	Automatic interpreted Lithology Digital description features display Customizable logs

slb.com/AutomatedLithology



Well Construction Measurements Portfolio

2024

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