



DRILLING

A global leader in technology,
expertise and service delivery.

WE KNOW THE DRILL.



A state-of-the-art fleet backed by the strength of Ensign

For any type of well, in any location, you'll find the perfect solution in Ensign's fleet. Shallow wells to ultra long-reach laterals, to state-of-the-art automated walking rigs, every rig is backed by Ensign's global strength and commitment.

Ensign has the fleet flexibility to ensure the most efficient execution of wellbore construction.

Whatever the well demands, Ensign delivers

- We offer a comprehensive suite of services, all with superior Ensign expertise:
- Conventional Drilling
 - Directional Drilling
 - Managed Pressure Drilling
 - Coring & Specialty Drilling
 - Equipment Rental

Our EDGE Analytics + Controls

Our advanced performance management process integrates real-time data capture and advanced analytics reporting with state-of-the-art rig performance controls to unlock value, enable decision-making, and continuous improvement.

EDGE Analytics

Streams rig date 24/7 and uses machine learning algorithms to pull out meaningful data to continuously improve rig, crew and drilling performance.

EDGE Controls

State-of-the-art drilling performance optimization technologies seamlessly integrate with all Ensign rig control systems. Stick-Slip Mitigation and Quill Oscillation work to alleviate downhole challenges, while AutoDriller optimizes the rig's control mode.

Learn more in our Ensign EDGE™ brochure.

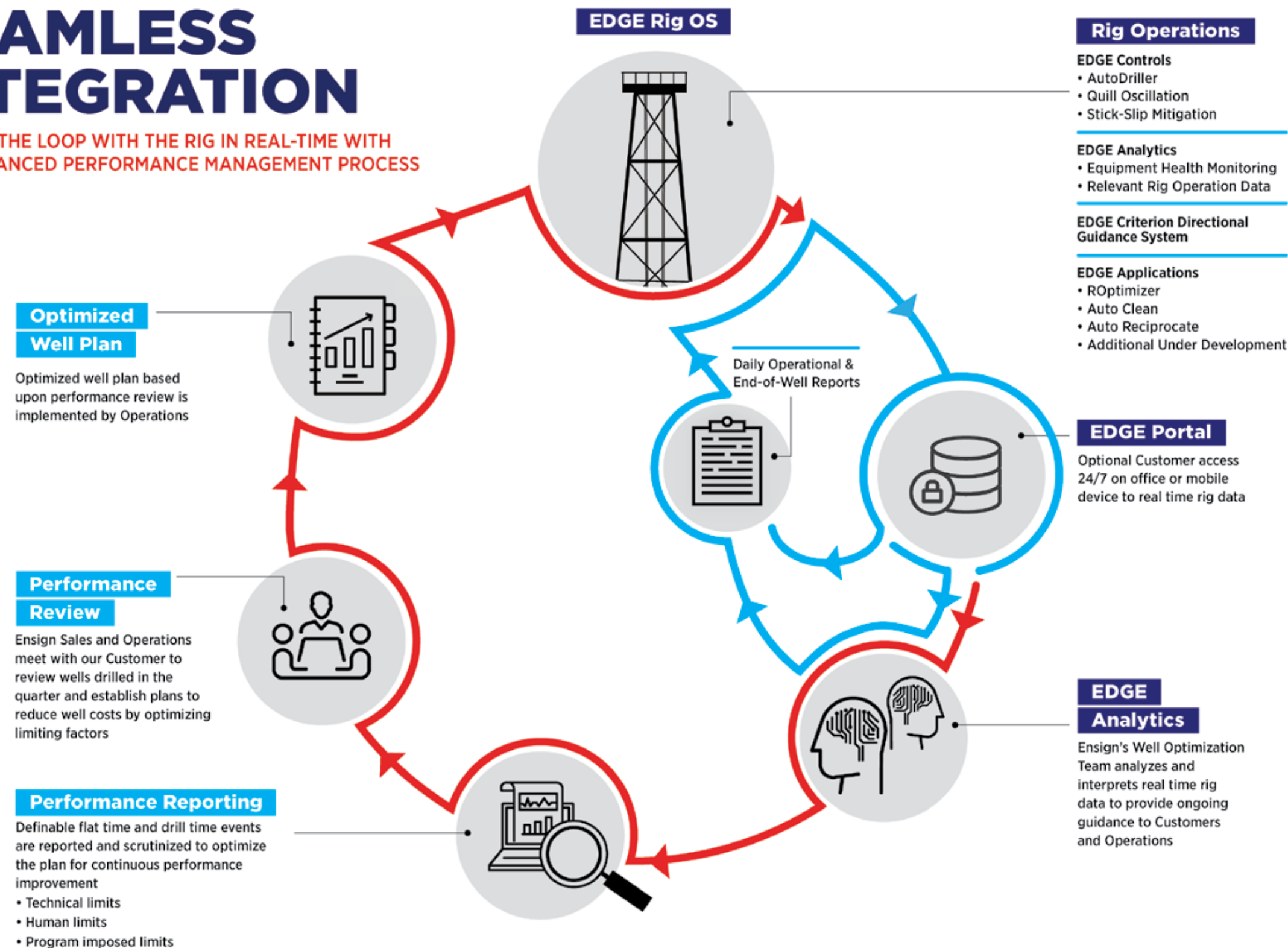


	Conventional	ADR® Singles	ADR® 850	ADR® 1000	ADR® 1500	ADR® 2000/3000 Large Conventional	Specialty
Application	Seasonal rigs for less complex wells	Hydraulic RAM floating crown design (500 HP)	Ultra-reach heavy teledouble	Triple craneless rig up	High capacity triple	Ultra high capacity triple	Special application rigs (urban-friendly, zero disturbance), slant and core rigs
Drawworks	750 - 1000 HP	700 HP, inherent pull down capability	850 HP	1000 HP	1500 HP	2000 - 3400 HP	750 - 1500 HP
Mudpumps	Available in single or dual pump configurations up to 1000 HP	Available in single and dual pump configurations up to 1000 HP	Available in single and dual pump configurations up to 1600 HP	Dual 1600 HP pumps (5000 and 7500 PSI)	Dual and triple 1600 HP pumps (5000 and 7500 PSI)	1600 - 2400 HP pump 7500 PSI configurations	1000 - 2000 HP pump
	Agile fleet of upgraded medium to heavy mechanical rigs with top drives	Available in three hookload capacities (100,000#, 200,000#, 300,000# HL capacity)	+/- 400,000# HL capacity	500,000# HL capacity	750,000# HL capacity	1,000,000 - 1,500,000# HL Capacity	
	Strategically located to reduce move costs	Fully automated pipe handling system with offline standbuilding capabilities on certain models and several levels of automation available					
	Top drive	Hi-torque topdrive					
		Climate controlled drillers control room optimizes driller's experience with state-of-the-art controls system					
		EDGE: Innovation software control package available which optimizes drilling time					

*HIGH-SPEC/SUPER-SPEC - 7500 psi, enhanced setback, pad capable, 3rd pump option, EDGE Controls automation available, HI-TORQUE tubulars available, HI-TORQUE top drive

SEAMLESS INTEGRATION

CLOSING THE LOOP WITH THE RIG IN REAL-TIME WITH OUR ADVANCED PERFORMANCE MANAGEMENT PROCESS



EDGE Analytics streams rig data 24/7 and then uses machine learning algorithms to pull out meaningful insights to improve drilling performance.

EDGE Controls includes separate software modules, designed by Ensign, to seamlessly integrate with our rig equipment. Stick-Slip Mitigation and Quill Oscillation work to alleviate down hole challenges that can reduce bit performance and cause deviation from the well plan. With these effects minimized, AutoDriller optimizes the rig's control mode, so drilling can follow the well plan as closely as possible.

Meanwhile, Ensign's well optimization personnel are in constant contact with the rig and office experts in a cycle of continuous improvement.



DELIVERING CUSTOMIZED SOLUTIONS FOR UNPARALLELED PROJECT EFFICIENCY

Whatever your drilling challenge, Ensign is your solution. We offer an extensive fleet of technologically advanced, purpose-built rigs and a comprehensive range of drilling services.

Everywhere we operate, from arctic to equatorial; desert to rainforest - our team works hard and smart, providing consistent and dependable world-class energy services and results.

Ensign is among the world's strongest consolidated energy service suppliers. Over three decades in the business, we've built a culture of innovation that has secured our leadership position in performance and operational best practices.

The result: improved safety and optimal performance with lower costs.

EDGE Analytics

Data-Based Decision-Making



We have moved beyond “flat” data interpretation to reliable insight into drilling operations.

With the power of Ensign’s Global Network, our rigs have a 24/7 data connection that continuously delivers machine data and drilling performance data to our enterprise servers. Using sophisticated analytics, we then pull meaningful data out of the noise and compare it to theoretical models and “known, good examples.” The result is reliable insight for decision making.

On every well, Ensign’s well optimization personnel mobilize through a feedback loop, remaining in contact with drillers at the rig and managers in the field and office. This includes daily reports comparing KPIs from rig to rig, well to well and driller to driller.

EDGE Controls

Drilling To Your Well Plan



EDGE Controls calculates optimum conditions that make our drillers even better at what they do.

Well plans have become more complicated, requiring advanced controls to stay on track.

We know that downhole issues with stick-slip, vibration and other friction related problems could quickly lead to deviations from a well plan. These effects can be reduced with our advanced Stick-Slip Mitigation and Quill Oscillation software.

AutoDriller is then able to optimize the rig’s control mode to more accurately and consistently keep the bit on bottom with optimum drilling parameters. Edge Controls is available on every AC rig in our fleet.

EDGE Controls



Stable and consistent control as you drill forward

AutoDriller

AutoDriller uses advanced algorithms to optimize the desired control mode, ensuring the correct WOB, DP, Torque or ROP are held for the duration of the stand. The system continuously calculates and then switches to the optimum control mode to ensure smooth and consistent drilling. Drillers have sophisticated AutoDriller tuning capabilities at their fingertips.

Stick-Slip Mitigation

Stick-slip is present in about 50% of on-bottom time rotary drilling and can cause the bit and BHA to completely stop and accelerate three to five times the surface RPM. Our Stick-Slip Mitigation software compensates for the conditions that lead to stick-slip, widening the drilling envelope.



A wider drilling envelope improves efficiency



Greater support for directional drilling

Quill Oscillation

This software aids in sliding and curve build segments of a well by rocking the drill string back and forth according to parameters set by the driller. This rocking reduces the friction with the wellbore and produces a more efficient transfer of weight to the drill bit, supporting directional steering.

Meanwhile, Ensign’s well optimization personnel are in constant contact with the rig and office experts in a cycle of continuous improvement.

We’re in the age of big data. Drilling operations generate over one gigabyte of data per rig every day.

The secret to drilling success is not how much data you collect, but how you use the data to improve performance on every well.

Training

At Ensign, we're proud our people meet rigorous skill and safety standards; standards that provide our customers with a consistent level of service on all of their projects. We know that when our crews mobilize, our people are capable, experienced and ready to excel. Ensign believes quality training for our people means quality service for our customers.

This approach to customer service is rooted in Ensign's enterprise-wide Global Skills Standard (GSS). GSS is an approach to training that uses a

standardized curriculum to ensure and guarantee Ensign's people (specifically, rig crew) around the world, meet our global criteria for skills and competency, enabling us to provide a consistently high level of service in all our operations.

Our customers deserve the assurance that Ensign meets benchmark standards of performance, regardless of the size or location of an operation.

Health, Safety and Environment

At Ensign, we're striving for a perfect Health, Safety and Environment record.

In our industry, there's no compromise on health and safety. And Ensign is never complacent about safety performance. We believe all incidents are preventable. That's why we train our employees in a high-performance safety culture and are continuously Driving to Zero®.

Zero safety incidents. Zero injuries. Zero absences due to injury.

Training starts on the first day of employment and is continuously reinforced through rigorous job safety analysis practices, personal injury prevention training, safety coaching, pre-job safety meetings and work observation and intervention programs.

We take responsibility for our impact on the environment and actively work with our customers to reduce, reuse, recycle and reclaim materials used in our operations.



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