OCTAVE

# Digitalizing your oil and gas projects

Octave accelerates the digital maturity of your project planning, design and execution processes to enable improved data velocity, visualization, and collaboration –the keys to transforming your engineering and construction projects into more autonomous and sustainable Digital Projects. These solutions help project-driven organizations foster an environment that supports new levels of transparency and productivity in your Digital Projects world.

No matter where an engineering, procurement and construction (EPC) firm or owner operator (OO) is on its digital transformation journey, Octave can help increase the level of digital maturity to facilitate the optimization of Digital Projects to maximize profitability and quality by minimizing rework, waste and other risks in industrial planning and development. Explore the digital solutions that EPCs and OOs are using to deliver the oil and gas projects of tomorrow, today.

As the oil and gas industry continues to diversify and transition to include a cleaner energy portfolio, the global trend of a surging fossil fuel industry has elevated the need for new exploration and production projects. With engineering, procurement and construction firms around the world capturing new bids and kick-starting projects, there are still many challenges and obstacles to overcome and deliver on time, within budget and with the right resources.
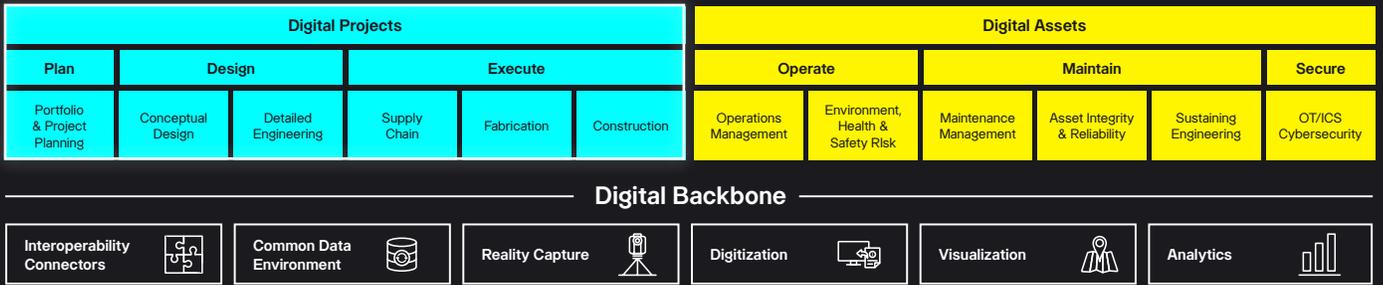
## Challenges for engineering, procurement and construction firms

- Delivering projects on time and within budget allowing the operator to obtain "First Oil" quickly

- Maximizing transparency and collaboration

- Increasing project visibility and control

- Minimizing "brain drain"/ loss of human capital

- Winning more bids / increasing repeat customer projects

## Challenges for contractors, fabricators, design and construction management

- Reducing the complexity in handovers

- Having greater project transparency

- Making project management more efficient

- Improving resourcing of people and materials

- Being able to see into the supply chain

Owner Operators self-performing projects face many of the same challenges. Perhaps there is a greater proportion of brownfield projects or projects focused on maintenance and sustaining engineering, but in the end, manual processes and the need for more transparency similarly put project success at risk. Additionally, OOs are responsible for determining optimal capital allocation – what portfolio of projects will be funded to provide the greatest fulfillment of strategic priorities. The ability to deliver the RIGHT projects on time and within budget is fundamental to long-term OO success.

## Smart Digital Reality™

| Digital Projects | | | | | | Digital Assets | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Plan** | **Design** | | **Execute** | | | **Operate** | | **Maintain** | | **Secure** |
| Portfolio & Project Planning | Conceptual Design | Detailed Engineering | Supply Chain | Fabrication | Construction | Operations Management | Environment, Health & Safety Rlsk | Maintenance Management | Asset Integrity & Reliability | Sustaining Engineering | OT/ICS Cybersecurity |

## Digital Backbone

| Interoperability Connectors | Common Data Environment | Reality Capture | Digitization | Visualization | Analytics |
|---|---|---|---|---|---|

# How Octave's solutions can help resolve these industry challenges

Octave's solutions provide a unified, role-based, real-time view of the physical and digital realities infused with intelligence to automate processes and analytics. Our engine connects data across the entire industrial asset lifecycle to enable you to achieve more.

Octave's approach to digital projects for the oil and gas industry facilitates state-of-the-art planning, design and execution via a data ecosystem that is integrated, aggregated and actionable across the project lifecycle. By leveraging Octave's solutions, companies can use the infrastructure and services needed to facilitate data consolidation and interoperability and ensure all data sources are captured and applied within the context of their digital projects. A digital thread is continuously maintained through all phases and processes from ideation through project closeout. This allows for transparency, timely decision-making, collaboration and risk mitigation and drives better project outcomes that increase safety, quality, productivity and efficiency.

Fuel your projects with an extensive suite of digital solutions that help you improve project selection, performance, integrated design, materials management, procurement, logistics, collaboration, fabrication, construction and completions to optimize project delivery and the digital twin for stronger operations.

# Elevate your oil and gas projects to the digital level

## PLAN
### Portfolio & project planning
Seamlessly integrate data across portfolios, projects, assets and disciplines to optimize project selection, management, resourcing, and profitability.

**Octave Sequence Enterprise** (formerly EcoSys) allows you to optimize your project portfolios, identifying the right timing, capacity and resources while controlling costs and improving outcomes.

**Octave InConcert Core** (formerly HxGN SDx) uses the data within the digital twin to improve project and operational efficiency while reducing risk.

## DESIGN
### Conceptual design & detailed engineering
Intelligently design, engineer and implement true workflow-managed integration across the enterprise.

**Octave Forte 3DWorx** (formerly CADWorx Plant Professional) enables quick and easy start-up of small-to-medium scope design projects by including a complete DWG file-based range of tools.

**Octave Facets P&IDWorx** (formerly CADWorx P&ID Professional) easily create fully intelligent piping and instrumentation diagrams (P&IDs) without the need to change existing drawings, symbols or corporate standards.

**Octave Forte ReviewWorx** (formerly CADWorx Design Review Professional) allows the review and publishing of CADWorx models by designers, owners and other stakeholders.

**Octave Forte StructureWorx** (formerly CADWorx Structure) Integrated CAD modeling structural design software that includes an international catalog of steel-shape libraries.

**Octave Aspect Pipe Stress** (formerly CAESAR II) The industry standard for pipe stress analysis lets you build, assess and report on piping systems of any size or complexity in accordance with more than 35 international piping code standards.

**Octave Aspect Nuclear Pipe Stress** (formerly PIPESTRESS) A complete calculation system for nuclear and non-nuclear piping codes, the solution is continuously maintained in accordance with nuclear QA procedures for more than 40 years.

**Octave Aspect Pressure Vessel** (formerly PV Elite) provides a complete solution for vessel and heat exchanger design, analysis and evaluation.

**Octave Aspect Tank** (formerly TANK) offers comprehensive, easy-to-use tank designer software for the design, analysis and evaluation of oil storage tanks.

**Octave Aspect Structure** (formerly GT STRUDL) includes all the tools necessary to analyze a broad range of structural engineering data.

**Octave Forte 3D** (formerly Intergraph Smart 3D) delivers mission-critical requirements for medium-to-large size projects and assists in creating, modifying, analyzing or optimizing 3D "as-built" representations.

**Octave Facets Electrical** (formerly Intergraph Smart Electrical) helps you design and maintain a safe, reliable power distribution system.

**Octave Facets Instrumentation** (formerly Intergraph Smart Instrumentation) gives you a single engineering and design environment to create and manage instrumentation data.

**Octave Forte Isometrics** (formerly Intergraph Smart Isometrics) plays an important role in the production and transfer of piping data for the as-built plant, powered by Octave Forte Isogen.

**Octave Facets P&ID** (formerly Intergraph Smart P&ID) helps you develop and manage your piping and instrumentation diagram.

**Octave Forte Reference Data** (formerly Intergraph Smart Reference Data) maintains catalog and pipe specifications for Intergraph Smart 3D and other solutions.

## EXECUTE
### Supply chain, fabrication and construction

Reduce project risk with a rules-based change management solution that communicates across procurement, construction and completions processes.

**Octave OnSite Visualize** (formerly iConstruct Pro) addresses the unique challenges of complex construction projects and enables Advanced Work Package (AWP) excellence.

**Octave OnSite Completions** (formerly Intergraph Smart Completions) consolidates asset information and verifies equipment installation, testing and performance.
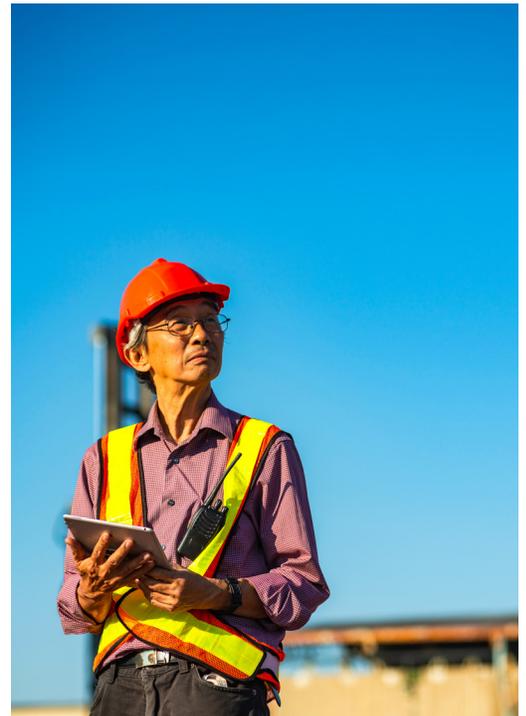
**Octave OnSite Construction Planning** (formerly Intergraph Smart Construction) enhances your ability to plan and manage larger construction projects.

**Octave OnSite Production** (formerly Intergraph Smart Production) features a bottom-up approach to control the fabrication process based on Industry 4.0 concepts.

**Octave OnSite Spool Design** (formerly Intergraph Spoolgen) enables the creation of piping isometric drawings for fabrication.

**Octave Forte Isogen** (formerly Isogen) brings you the world's leading solution for the total automation of piping isometric drawing production.

**Octave Loop Material Readiness** (formerly Jovix) delivers award-winning Material Readiness and is designed specifically for industrial construction to know where your materials are always.

# Advantages you can expect with digital projects solutions from Octave

**Optimized** strategic decision-making for opportunity and resource planning

**Integrated** construction management simplifies collaboration and the Request for Information (RFI) process

**Improved** engineering and construction project management with better planning earlier to prevent future issues

**Boosted** transparency with visibility and collaboration gives project managers insight to improve pre-construction efforts

**Reduced** time and resource waste with all the relevant information into one environment including 2D drawings, 3D models, labor resources, progress and schedule and cost reporting to mitigate risk

**Increased** safety from the design phase all the way through to plant operations

**Empowered** project teams that can confidently optimize, manage and control projects using real-time performance data to improve margins

**Enhanced** technology-driven competitive advantage that increases repeat customers, resourcing opportunities and a healthier bottom line

# What our customers are saying...

"We do not want, as an EPC contractor, to have a data warehouse of Octave products and then islands of data that sit in other systems. We have to be able to integrate all that in one piece and make it a meaningful digital twin for the customer and companies like Octave play a big part in realizing that vision."

"[With Octave Sequence Enterprise (formerly EcoSys)] We now have one true dataset that allows us to be more predictable. We can see what a trend is or not, leading to better proposals and better execution."

"[Post-Octave InConcert Core (formerly HxGN SDx) implementation] Octave tools help us to improve overall efficiency. Revision control, tag management and handover from engineering to operations is faster and easier when everybody has access to the right information at the right time."

"Octave Forte 3DWorx (formerly CADWorx) helped us avoid all the project challenges associated with historic construction such as constructability issues, coordination problems, fabrications errors, material purchasing omissions and pipe support stress analysis accuracy."

"By leveraging the Octave Forte 3D (formerly Smart 3D) and Aspect Pipe Stress (formerly CAESAR II) interface capabilities and customizing our approach, we minimized remodeling times and were able to produce all deliverables on time."

"Octave Aspect Pressure Vessel (formerly PV Elite) takes all the different aspects of vessel design and puts them all together. PV Elite encompasses the multiple disciplines of engineering required to design a process tower along with up-to-date design codes."

"With Octave Aspect Structure (formerly GT STRUDL), we saved $1 million in manpower expenses and an overall $3 million in time and resources, performing the evaluation in less than 23 days."

"Octave OnSite Construction Planning  (formerly Intergraph Smart Construction) provides a platform for us to review 3D models, generate materials lists, and check information. It allows us to precisely record field construction status based on configured rules of credit, and report on this status. We can view progress in all stages of construction and make informed decisions with confidence."

With Octave, you can increase the data velocity, interoperability and intelligence across the asset lifecycle. With our Digital Projects' solutions, your organization can visualize, collaborate and foster new levels of transparency, productivity, efficiency and safety, while mitigating human and cyber risks for more reliable and profitable industrial facilities.

**Contact us to learn more about how we can help you digitalize your oil and gas projects today.**

**About Octave**

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property, and assets– for any scope, at any scale. For decades, we've partnered with customers to sharpen performance, elevate efficiency, and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what's possible from day one onward.

© 2026 Octave

octave.com