



Octave Facets

Detailed engineering
schematics, built as data.

eBook

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Schematics aren't drawings anymore

For most of engineering history, the process for creating a piping and instrumentation diagram (P&ID) went like this: Someone drew it, someone else read it and the engineering lived on the page. That worked when the drawing was the deliverable. It doesn't hold up now.

A modern plant depends on its engineering data long after the drawing is done, all the way through construction, commissioning and decades of operation. When that data only lives as marks on a page, it fragments. A spec on one document stops matching the same spec on the next — and the gaps tend to surface later, when they cost the most to fix.

Octave Facets solutions start from a different premise. Schematics are data, governed by rules, not static pictures.

Facets is a family of schematic engineering solutions built around three disciplines:

- **Process:** Facets P&ID (formerly Smart P&ID) sets the process design basis as structured, rule-driven data.
- **Instrumentation:** Facets Instrumentation (formerly Smart Instrumentation) holds every instrument in one engineered record, from FEED through operations.
- **Electrical:** Facets Electrical (formerly Smart Electrical) runs the electrical workflow, from load lists to one-lines and beyond.

Different disciplines, one idea:

Get the data right and great deliverables will follow.

Facets P&ID

The process design basis,
built as data.

A P&ID is the master diagram of a process plant, including the pipes, valves, instruments, equipment and how they connect. Everything downstream leans on it. When it's a drawing, it's only as current as the last person to update it—and when it drifts, everything built on it drifts too.

Facets P&ID makes the diagram data. Every element is an object governed by engineering and customer standards, so the rules do the checking as you design and the right call gets made early. The P&ID stops being a picture of the plant and becomes a record you can search, filter and build on.

That changes how the work gets done. Filter the P&ID down to the task in front of you, whether that's commissioning, inspection or a single system. Compare any two versions to see exactly what changed in the design basis. Carve out part of a live plant, work on it then merge it back as the new as-built.

Proven across a wide range of industries, Facets P&ID deploys in a single office, across a work-sharing team or in the cloud, at whatever scale the project demands.



Facets Instrumentation

Every instrument,
in one engineered record.

Instrument engineering generates expansive detail per tag, including datasheets, loops, wiring and calibration. Spread that information across disconnected files and versions and it turns into a hunt. Which sheet is current? Which spec is real? What changed and when?

Facets Instrumentation keeps it all in one place. Every instrument is a single engineered record you can access and update without chasing files—with data validated as you enter it and rules that hold your standards in place. One source, current by default.

That record carries across the whole life of the plant, from early front-end engineering design (FEED) through operations. On the project, it means tighter design quality and fewer surprises. In operations, it means the full history of the instrumentation and control systems is there, so maintenance gets planned before an unplanned shutdown makes the decision instead.



Facets Electrical

The electrical workflow,
on one data model.

A plant needs a power distribution system that's safe, reliable and sized to the loads it carries. Getting there means running through a chain of work: load lists, one-line diagrams, schematics and cable routing—followed by commissioning and operations.

Facets Electrical runs that chain on one data-centric, rule-driven model. Build the one-line, balance the loads across buses, make the cable connections from a reference catalog and generate the schematics, with each task focused on the work in front of you rather than the whole tool at once.

Built for scale, Facets Electrical fits a small job or a mega-project the same way and covers the full life of the power system. At any scale, it's designed to run safely, reliably and maintain accuracy through operations.



Delivering the project

EPCs and owners alike live between three pressures: build it right. Build it on time. Build it on budget. Every discipline has to land, every deliverable must meet expectations and at the end, it all has to hand over clean. The margin sits in how little rework is needed.

This is where the Facets solutions pay off on the project. When the P&ID, instrumentation and electrical work are data governed by rules, errors surface as the design is built rather than in the field and deliverables stay consistent instead of drifting apart between teams. Less rework. Fewer surprises. A cleaner path to handover.

With scope, cost and schedule all moving at once, delivery is also a data problem. Octave's Sequence Enterprise (formerly EcoSys) is the project controls counterpart to the engineering work, bringing project portfolio management, cost control and forecasting into one place so leaders can see where a project stands and act to prevent overruns.



Running the plant

When the project ends, the plant's life is just beginning. An owner-operator runs the asset for decades, and the job shifts from building it to keeping it running. That means continuously considering uptime, maintenance, reliability, safety and the standing question of whether the records still match the plant.

Facets solutions earn their place here through what they leave behind. An as-built that was validated as engineering data and not reconstructed after handover gives operations a record that can be trusted. The instrumentation history, the electrical design and the P&ID as data all carry into the operating phase instead of ending at the project's edge.

From there, day-to-day asset management is its own discipline. Octave's Attune EAM (formerly HxGN EAM) handles the operating side—work orders, maintenance planning, reliability and the full history of each asset—so teams can move from reacting to failures toward preventing them.



Sharing the work

The hard part of a portfolio isn't the individual tools. It's getting their work to come together cleanly. Wire each tool directly to every other and you get a tangle: brittle connections, no clear record of what moved where and a new failure point every time something changes.

Octave's answer is a shared environment rather than direct links. Each Facets discipline stays the authority on its own data and shares that work into Octave InConcert (formerly HxGN SDx2), an engineering information management solution where information from across the project is aggregated, made visible and handed over in a controlled, auditable way. Everything meets in one place, by design. For anyone who has to answer for what changed and when, that governance is the point.

The other hand-off is to 3D. Where Facets solutions define what gets built and check that everything holds together, Octave's Forte 3D (formerly Smart 3D) defines how it gets built in physical space: the plant model, the clash-checked layout and the basis for construction. Validated schematic data becomes the starting point for the 3D model, and InConcert can bring those models into the same shared view for review and markup.



Industries Octave Facets serves:

- Chemicals and petrochemicals
- Data centers
- Defense
- Engineering services
- Food, beverage and retail
- Life sciences and pharma
- Manufacturing
- Metals and mining
- Nuclear
- Oil and gas
- Power and utilities

What it comes down to

Underneath the disciplines and the hand-offs, it comes back to one idea: when engineering lives as data, it holds together for the life of the plant through design, construction and the decades of operation that follow. That's what Facets solutions are built for.

Ready when you are

Bring us your biggest obstacles.
We'll bring the expertise it takes to solve them.

[Learn more about Octave Facets](#)



About Octave

eBook

Octave provides enterprise software that helps organizations design, build, operate and protect critical industrial and infrastructure assets. Octave supports decisions across the full asset lifecycle where performance, safety and reliability matter and failure is not an option. Octave connects engineering, operational and safety workflows, enabling customers to convert complex operational data into decisions that improve performance, resilience and incident response across real-world environments. Octave has more than 7,000 employees in 45 countries. Learn more at octave.com and follow us on [LinkedIn](#).

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