BROCHURE

Octave OnSite Completions

Empower your project with cutting-edge digital execution tools and strategies



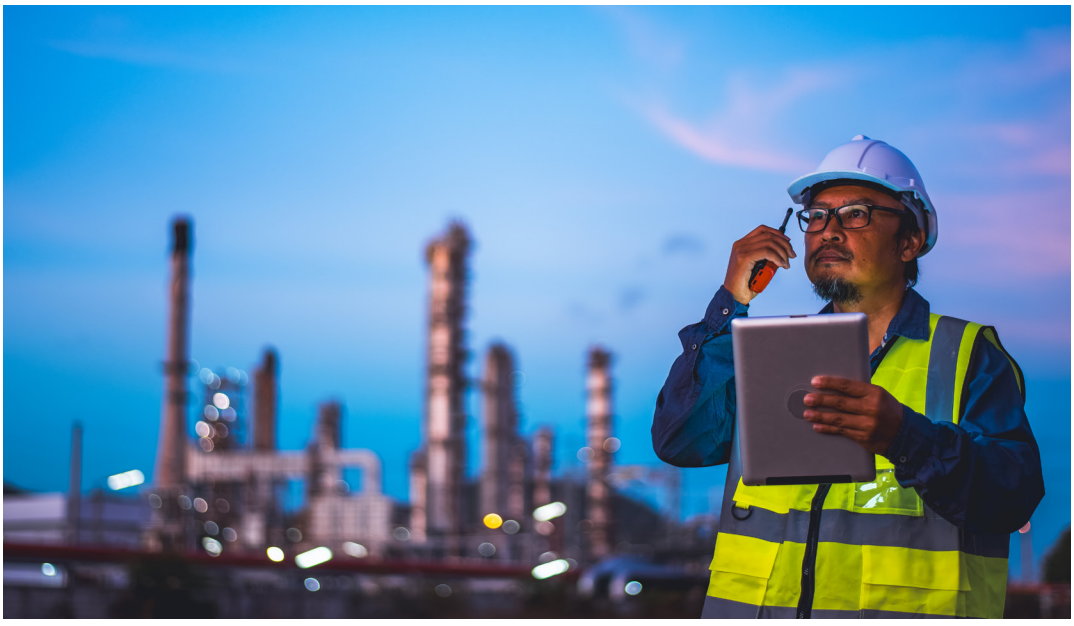
Octave OnSite Completions (formely Intergraph Smart® Completions) creates a foundation of information with traceability and accountability for planning, execution, and custody transfer processes by aligning activities and hand over requirements between construction, commissioning through to operations. It is a powerful "completions"-centric project portfolio and management solution designed to manage large and small projects alike. Its ability to apply, and re-use best practices and work processes greatly reduces the effort to effectively plan, execute and close out any sized project.

OnSite Completions is designed to manage a collection of global projects, whereby each region can work collectively to drive project planning, execution and turnover. The technological platform is designed as an enterprise completions and commissioning solution containing advanced and configurable, web and mobile applications that empower the field personnel with the latest engineering data, documents and digitized forms. The online/offline mobile capabilities enable the flexibility needed for remote work areas, however, providing the option for real-time (online) status reporting. This product is a highly data-centric solution that simplifies data loading and detailed reporting using Smart APIs and solutions like Power BI.

The solution is designed to manage and execute a project portfolio that drives repeatability, consistency and greater predictability. It uses a "data modeling" technique that expedites implementations, harvesting/re-use of best practices, standardized work planning, execution and turnover processes.

The advanced certification process provides flexibility in full or partial turnover, enabling the project to continue with forward momentum and minimize impacts to the project schedule with project safety as top priority. The ability to automate certificate and turnover requirements ensures complete and safe Transfer of Care, Custody and Control (TCCC).

The system is designed to consolidate engineering information that is systemized and efficiently assigns all required installation, functional and performance requirements, along with subsystem/system performance testing. The ability to standardize QA/QC requirements expedites work package development, administration and a clear path to TCCC of plant equipment and systems. It ensures all equipment, instruments, piping and Control Loops are operating as designed and any punch items are managed prior to TCCC processes. OnSite Completions' flexible foundation provides projects the tools needed to track all facets to ensure system integrity and deliver the required documentation to owner/operators via configurable Digital Turnover Packages (TOPs) so plant personnel can easily access any historical data that supports the "As-Built" digital reality.



OnSite Completions is comprised of a suite of configurable "modules" that can meet specific project requirements. It implements a rigorous QA/QC process with clear requirements to implement TCCC processes and define in advance requirements to meet both contractual and efficient turnover points and ensure commissioning can implement a safe, confident start-up.

Modules are grouped, for example by:

- Engineering (i.e., asset and document registries, data exchange)
- Project controls (i.e., RFIs, MOCs, Schedule, Lessons Learned)
- Completions and commissioning (i.e., inspections, punch, work packaging, certification, turnover, loop, preservation)
- Safety (i.e., HIRA, inspections, near miss, isolations) Shutdown, Turnaround or Outage (STO) (i.e., combination of above)

Typical user base

- Oil and gas
- Mining and metals
- Nuclear
- Power and utility
- Alternative energies and renewables
- Life sciences
  - Pharmaceutical
  - Chemical
  - Food & beverages
- AECs (commercial facilities)

EPCs and owner operators are transitioning to an integrated environment in an effort to reduce delays through improved collaboration and information accessibility.

- EPCs
- Owner operators
- Service providers



Completions and Commissioning Management System (CCMS) - 'Typical' Implementation/Use-Case Process:

Step 1 | Configuration and data loading: Instance/project creation, definition of tree structures (i.e., systemization, WBS), engineering data loading, certificate and turnover package configuration, and development/copy of best practice task models (digitized smart forms)

Step 2 | Define best practices: Auto-assign task models to any object (asset, loop, pack) to generate full list of level 6 planned tasks, and customize resource man hour (MH) requirements

Step 3 | Task and work packs: Auto-assign planned tasks (i.e., inspections) into project tailored work packages (i.e., IWPs), aligned with discipline, WBS, systemization and contractor requirements

Step 4 | Work administration: Administer work packages and planned tasks to field personnel (auto-compile digital packages with latest drawings, data, forms, etc.)

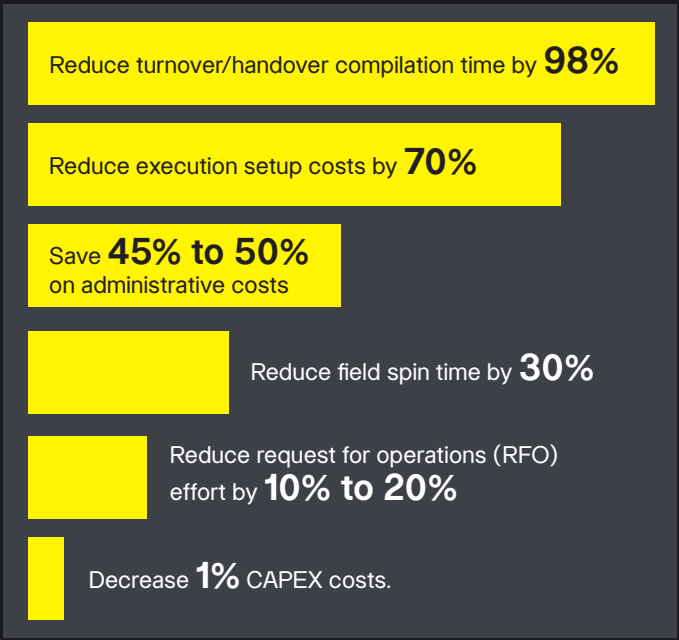
Step 5 | Field execution: Field personnel perform all required tasks, fill out forms, generate and/or clear out punch items and capture as-built information

Step 6 | Custody transfer: Issue assurance certificates to review all required items are completed and Notice of Energization (NOEs) can be issued. A rigorous and sequential certificate process ensures all equipment, subsystems, systems meet TCCC and receiving party requirements

Step 7 | Operational turnover: Approve and submit digital turnover packages (i.e., MC and/or TOPs) to receiving party and correlated in a manner to be easily consumed by client legacy systems, update best practices

Key benefits and capabilities

- Data exchange module and Smart APIs enable automated data transfer, collision behaviors, and improves overall Management of Change (MOC) processes
- Utilize existing Out-of-the-Box (OOTB) Connectors for Data Transfer, i.e. Octave InConcert Core (formerly HxGN SDx), Aconex from Oracle
- Simplify scoping of system and subsystem boundaries using OOTB integration with Facets P&ID (formerly Intergraph Smart P&ID) and access to colored systemized drawings
- Extend analytical and real-time reporting to Power BI via Smart APIs
- Ability to manage a project portfolio in a single database, simplifies shared best practices and standardized configuration
- Multi-project capability simplifies project access through single interface
- Data models used for quick and detailed resource execution estimates
- Advanced user management enables projects to apply rigorous restrictions to content based on company and/or workgroup(s) associations
- Utilization of "data models" and pre- configurations enables quick deployment
- Re-use best practices using "data model" concept, enabling continuous improvement
- Data models standardize inspection and testing requirements; automate assignments
- Data models define certification requirements, configurable per project
- Data models define turnover content and compilation requirements
- Digital mobile execution automatically compiles latest documentation to support field execution, while providing real time reporting
- Ability to easily compile work packages/job cards using "creation wizard"
- Eliminate time consuming tasks via ISC automation utilities (i.e., task assignment)
- Standardize assurance certificate/TCCC requirements and assignment
- Demonstrate technical integrity across all phases of the project via certification process
- Automatic turnover package compilation and submission to operator
- Ensure all preservation historical data is included with TOPs to support warranty requirements
- Easily identify completions quality and safety issues and required solution owner
- Incremental or full "as-built" turnover packages (TOPs) using digitized process





Reliable, proven and tested

- High adoption and retention rate by EPCs, OOs and service providers alike
- Ad-hoc standard for many regions throughout the world
- Continually used on all sized projects for 15 years or more
- Proven cost reduction and efficiency increase in digitized turnover process
- Implemented on large scale projects with thousands of active users any one month
- Single source of truth

Industries span and applicability

Oil and gas, utilities, renewables, mining, nuclear, petrochemicals, offshore, Industry 4.0, cloud-based solution contributing to the Smart Digital Reality™ (SDR).

Real-time, smarter decisions

- Advanced reporting
- Power BI interface via Smart APIs
- Collaborative environment for all stakeholders

Proven and tangible outcome results

- CAPEX and OPEX impact that matter. Enablement to execute digital business strategy.

Data exchange enablement

- Unlocking communication barriers with digital twin through data exchange module
- Utilize live integration using Facets P&ID, InConcert Core, Aconex from Oracle and Team Binder connectors
- Seamless, reliable and automated change control with critical engineering data
- Access sync log, data sets and impacted records

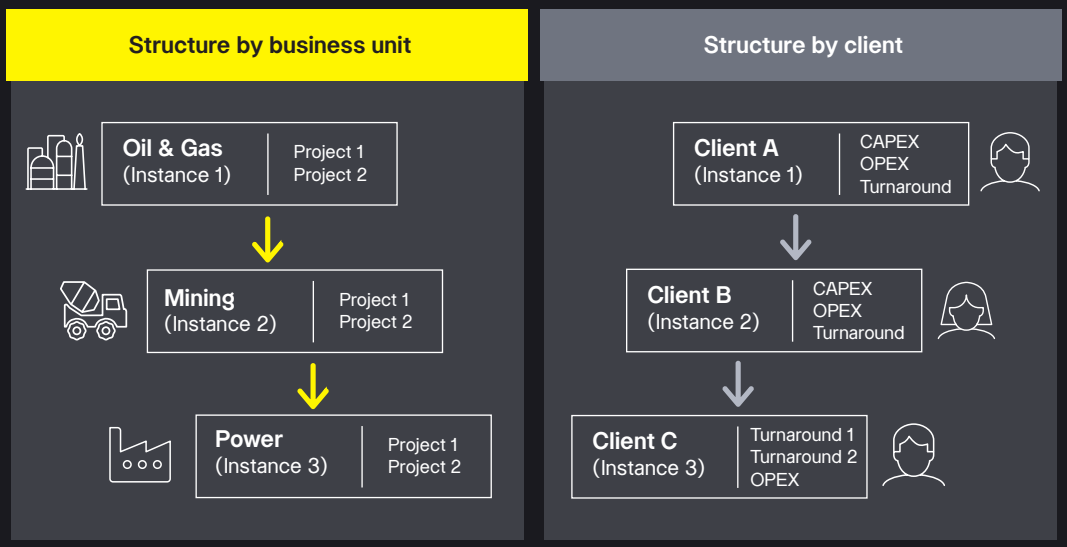
Innovation and ingenuity

- Continual investment in technology roadmap, automation and enhancements
- Roundtable reviews with clients to capture actionable feedback for continuous improvements/enhancements

Relevance

- Modern, intuitive advanced UX experience
- Developed by hands-on field experts to meet site completions and commissioning challenges (i.e., advanced "wizards" to automate time-consuming activities and standardize execution strategies)

Standardize Project Portfolio - Execution and Reporting



Instances and projects

Depending on the project needs, OnSite Completions allows system administrators to create multiple instances within a site and multiple projects within an Instance. Its ability to configure different workflows and other configurations per instance enables clients to customize project requirements from a standard configuration template. The "project creation wizard" is also used to quickly set up a new project and application of best practices, streamlining planning, execution and reporting standards.

Systemization and location structure

OnSite Completions is an advanced web application designed to be fit-for-purpose, yet flexible to allow for re-purposing of fields, labels, columns, menus/switchboards, etc. Its flexible design enables end users to easily populate, and associate tags-to-systemization that is used to automate many time-consuming activities. Systemization (a.k.a. Process Breakdown Structure - PBS) is utilized in many "creation/assignment" wizards to automate task, certificate, turnover package assignments and consistent reporting. The alternate Location Breakdown Structure (LBS) is utilized for construction centric "bulk/area build" planning so a user can review progress from LBS as well as PBS. The tag allocation to PBS/LBS provides simplified reporting on progressing, custody transfer and most importantly, the "Completions Skyline" dashboard. This dashboard provides all relevant information to quickly see the readiness on subsystem/system handover and any pending items requiring resolution. The ability to "push" information to users is crucial for reporting efficiency and making informed decisions.

Task models (smart forms)

Task models are Current Best Practices (CPBs) that contain task/test profiles designed for specific object types (i.e., asset, loop, pack, system/subsystem). The task models contain critical information so that corporate standards can be integrated and applied quickly to any assigned task within minutes. These standards identify all labor, equipment and material requirements for any task, and provide the ability to quickly generate resource MH requirements (by trade, discipline, WBS, systemization, etc.) across the project. The labor estimates provide projects early on in planning phase to validate level 6 resource estimates against level 4 activity estimates in a master schedule. Analysis is essential early in the project, so that appropriate resources are allocated well in advance, so no delays or constraints occur on a project.

Import Project Control Tasks (PCTs)

Project Control Tasks (PCTs) are project-based tasks that align with "activities" generated in scheduling systems, such as Octave Sequence Enterprise (formely EcoSys™), Primavera P6 or Microsoft Project. Activities are loaded into OnSite Completions with specific attributes (i.e., discipline, system/subsystem, phase/stage) so that the completions system can auto-calculate and assign level 6 tasks to level 4 activities. The linkage provides very accurate progress reporting for any aligned activity. The linkage can also expose detailed resource/trade/MH planned and actual metrics that can be further analyzed and reported in the master scheduling system.

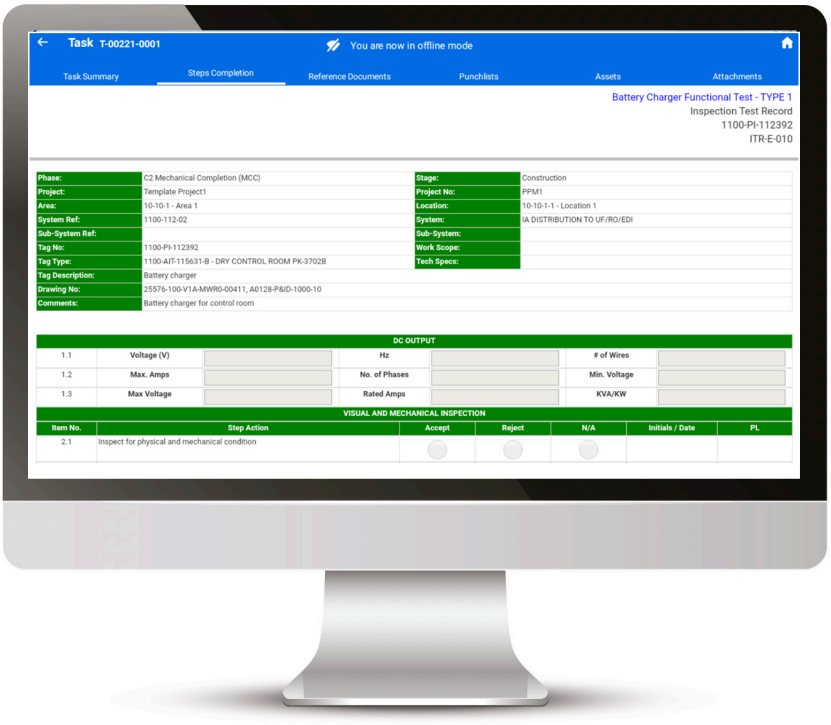
OnSite Smart Completions Companion (SCC) mobile application

The SCC Mobile Application is designed to simplify daily execution by automating the compilation of all required work packages, inspections, relevant documentation, equipment information and pending punch items. It has a powerful "sync module" designed to simplify check-out/check-in of assigned work and capture of as-built information. SCC applications are currently available in tablet form factor for iOS, Android and Windows operating systems.

SCC dramatically simplifies field execution, data capture (including OEM nameplate data), punching (including images), including capture of as-built annotations of latest drawings in PDF format. The advanced online/offline capability provides powerful options for clients/project locations regardless of Wi-fi access. The offline capability provides full access to all relevant information for their field work. Upon completion, field personnel simply check-in their completed (full or partial checksheets) and automatically update SaaS application for real time reporting. Every sync performs advanced data comparisons between the SaaS and mobile application. Any updated content is automatically updated on the mobile device so that field personnel are always working on the latest approved information.

The primary SCC capabilities are:

- Review and capture OEM information and imagery, as-installed information
- Review and annotate reference documentation (i.e., piping and instrument diagrams, single line drawings)
- Execute digital work packages (collection of digital tasks/inspections)
- Execute recursive preservation tasks and create non-compliances
- Execute on-demand tasks/inspections (flexible option for data capture)
- Create and complete punch list and non- compliance items with image capture/annotation (multiple as-found and as-left images)
- Create on-demand safety inspections
- Create and complete near miss/safety observations with image capture/annotation



Handover and turnover packages

The handover/turnover package is a powerful module designed for comprehensive correlated information and documentation compiled in a manner for ease of consumption for owner/operating companies. Based on the package type, specific information is compiled on an organized Table of Content (TOC), where each section will define specific content, format and reporting requirements. Handover packages are typically configured so that systems are handed over as Mechanical Completion packages (MCPs) and systems turned over in Turnover Packages (TOPs). These packages typically include the latest equipment, line, instrument, piping lists, all completed inspection forms, certificates, punch list items and completions status reports at a minimum. Packages are compiled as part of Transfer of Care, Custody and Control (TCCC) between construction to commissioning and commissioning to operations. All tests and related documentation, by law, must be handed over to the client upon satisfactory completion. It is essential that all documents are legible and included.

Reporting and data exchange

OnSite Completions reporting

Template reports included within OnSite Completions are many datasheets, index, and summary reports. These reports provide indexing of data (i.e., equipment list, punch list), roll-up status reporting using summary reports (i.e., progressing by system/subsystem, commissioning readiness reports), and individual status reports (i.e., punch list completion status by category, or task completions status by subsystem). Each report template can contain filtered content, and where needed a custom "saved report" can be created and accessed by an individual user (private), or by a set of project users (public) report. By combining advanced filtering, renaming of report headers, to reporting levels, a project can extract required information to generate on-demand, and real time reporting of a project. All reports can be exported into Microsoft® Excel or .CSV formats.

Report packages are a powerful feature that can combine several individual reports, using similar filtering criteria, into a single PDF file. It eliminates management opening several individual reports. It's very useful for reviewing contractor scope.

Client "configurable Power BI reporting" is available for those clients that want enhanced graphical reporting. ISC comes with a PBI Template (PBIX) that can be used OOTB and will enable users to analyze critical completions and commissioning information.

Completions skyline dashboard - The advanced dashboard displays all systems/subsystems, custody status, % complete and access to all relevant detailed completions information with a click of a button (i.e., tasks, punches, packages, certificates, assets, documents, etc.) Several filter options are available to customize the loaded content and reports can be generated on-demand.

Data exchange

The DE module is designed for system administrators to automate data importing or exporting using Application Programming Interfaces (APIs) or through traditional Microsoft Excel formats. It provides a single location to configure "data connectors" to other Hexagon products, client in-house and third-party solutions.

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.

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