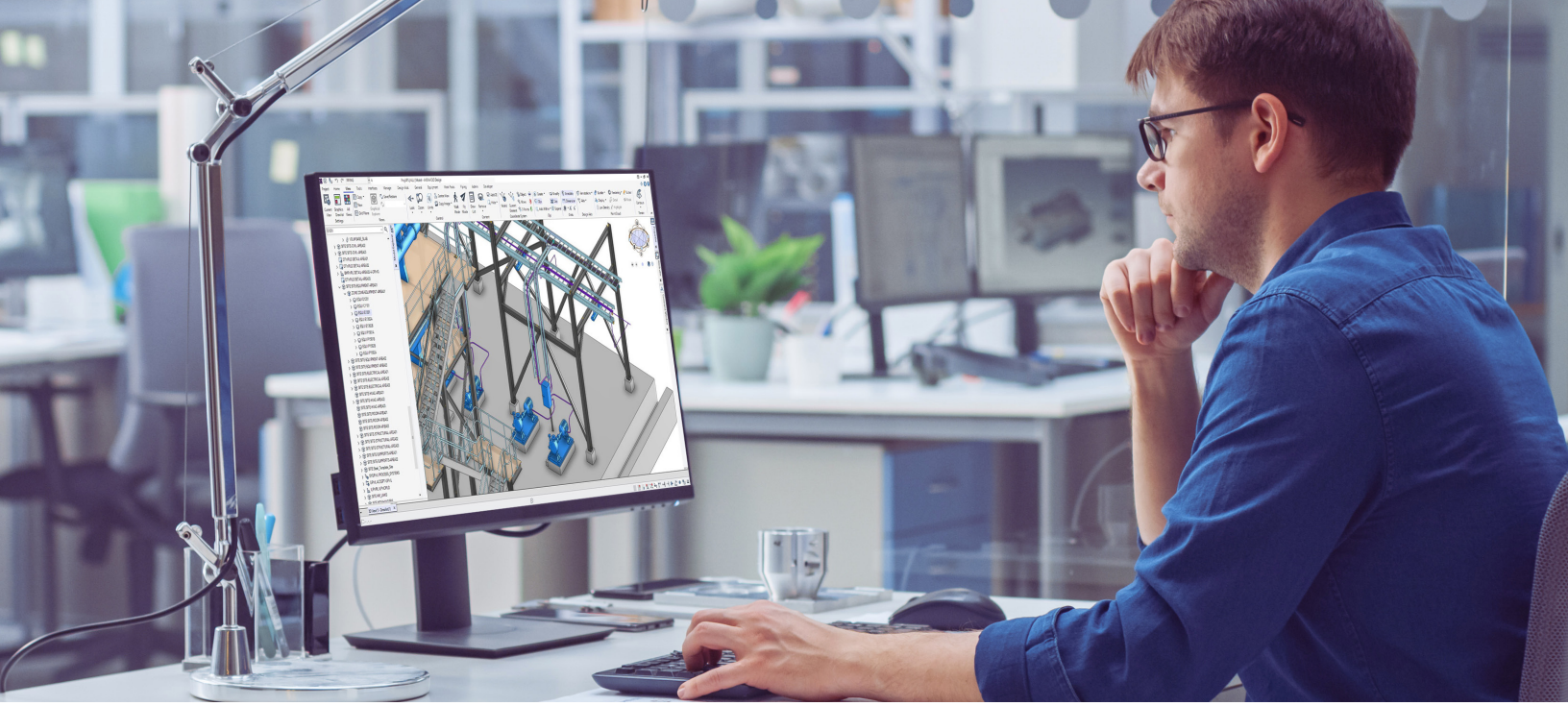


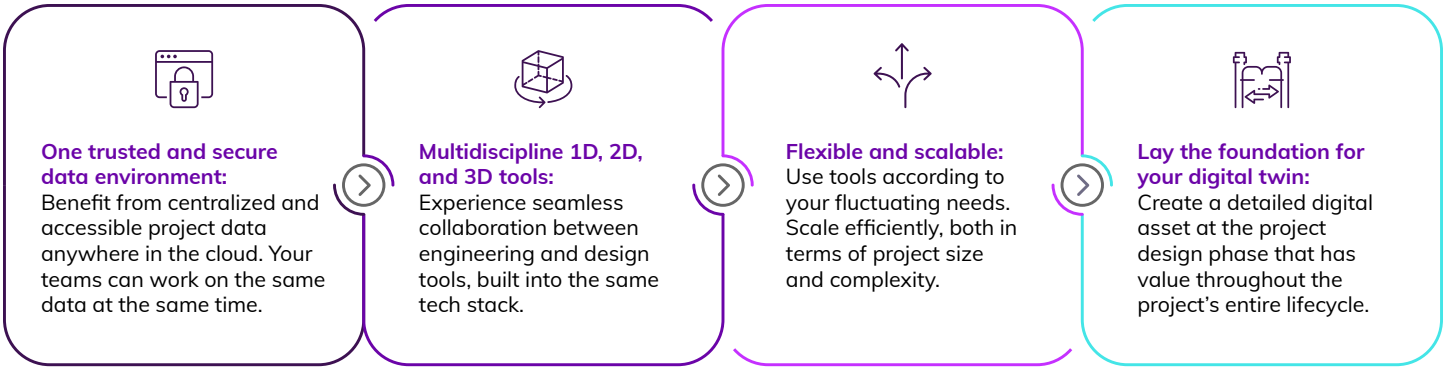
DATASHEET

AVEVA™ Unified Engineering

Discover the only truly data-centric 1D, 2D, 3D engineering and design tools. AVEVA Unified Engineering empowers your teams to openly collaborate and continuously build the foundation of your digital twin.

With AVEVA Unified Engineering you can deliver your capital projects quickly and efficiently. Seamlessly manage engineering information from a single source of truth, improving your internal processes and promoting collaboration across your teams. Deploy, start-up, and ramp-up your projects teams quickly. Comprehensively track and report your project requirements, ensuring that you meet them. Reduce costs, risk, and project inefficiencies so your team can deliver their best work as quickly as possible.

AVEVA



What is AVEVA Unified Engineering?

Bringing together 1D, 2D, and 3D tools, AVEVA Unified Engineering is an integrated, data-centric, multidiscipline engineering and design solution. With fast time to value, your teams can track, demonstrate, and deliver better, more efficient project outcomes.

Rather than engineering in an incremental, document-focused delivery workflow, your teams can work continuously together. Teams can use the same set of data across multiple disciplines, sites, and organizations. Users have immediate access to the most up-to-date project data, which saves huge amounts of time compared to document-based workflows.

"We have found that it improves efficiency in terms of how we work together. It's a modular process, so that makes it easy for us to adjust to client needs. There are also clear benefits in terms of cybersecurity."

–

David Phillips
Head of UK and Investor Relations at Aker Carbon Capture

"Our vision, through working with AVEVA, is to design and build projects safer, more sustainably, and faster, and ultimately reduce costs. For me, the benefits of working with AVEVA are that we have similar objectives, similar values, we work together in a transparent process so that we can deliver significant value for our shared clients."

–

Darren Martin
CTO, Wood

At a glance

- Data-centric engineering and design solution
- 1D, 2D, and 3D engineering and design tools on the same tech stack
- Open and agnostic – work with third-party tools and data
- Flexible and scalable
- Fast deployment, including hybrid options
- Inclusive technical support and software updates
- Multi-project, multi-tenant
- Detailed project deliverables management
- Centrally monitor and manage change
- Greatly improve project transparency for all stakeholders (both owners and contractors)

Benefits / Capabilities

Improved data management

- Increase transparency with a single source of truth
- Reduce required IT infrastructure

Improved workflows

- Access all 1D, 2D, and 3D engineering and design tools in a single tech stack
- Enable remote working across sites and disciplines
- Templatize and re-use design work on similar projects

Improved project outcomes

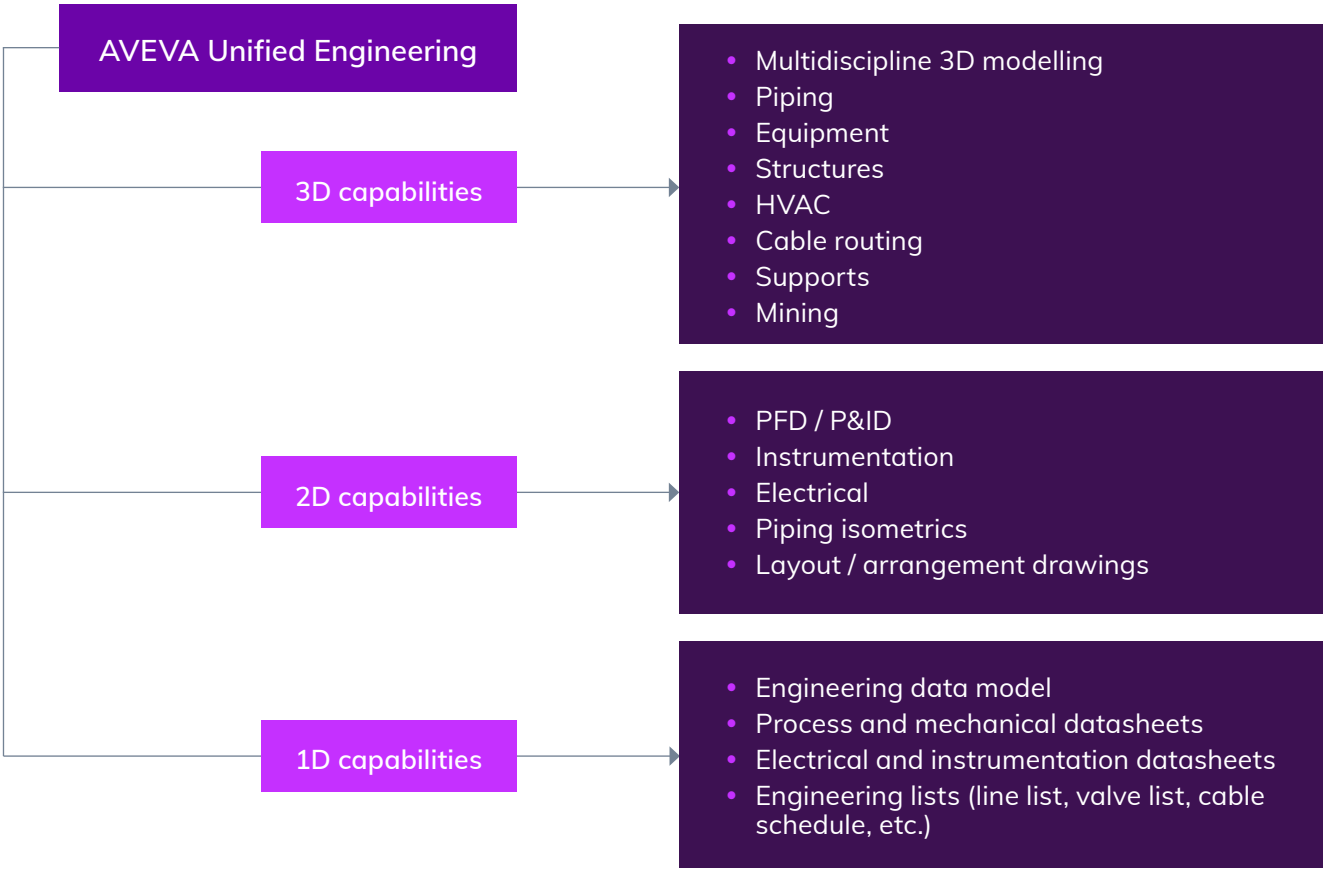
- Monitor and manage project change centrally
- Increase efficiency, reduce rework and risk

Improved life cycle management

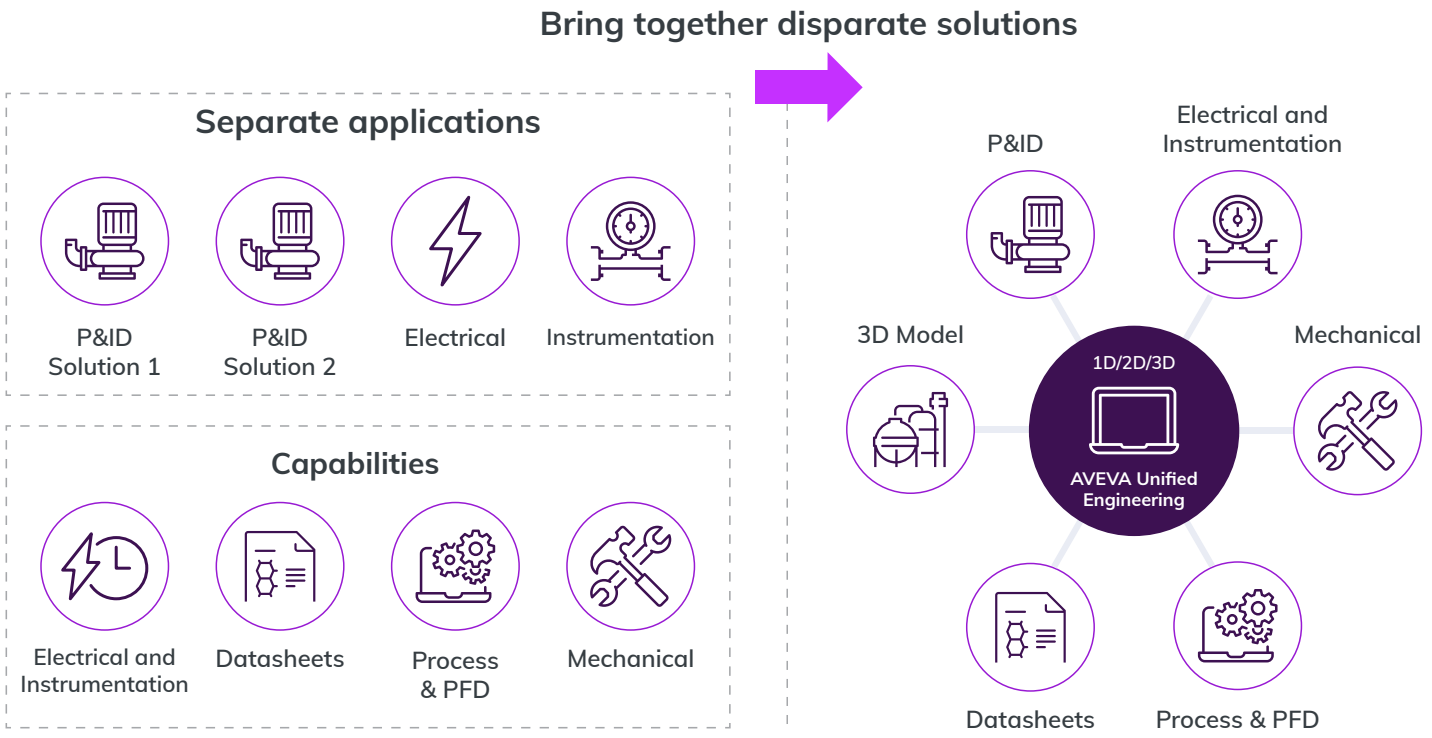
- Build a connected digital twin for the asset's entire life cycle
- Capture detailed data for continuous digital handover

Upgrade workflows (using a single source of truth)

Make incremental improvements to complex workflows. Utilize all 1D, 2D, and 3D engineering and design tools within a single tech stack:



AVEVA Unified Engineering is a multi-discipline tool, with fully integrated 1D, 2D, and 3D data-centric engineering and design tools. Evolve from separate commercial and technical offerings to a single, unified solution with enhanced data management, and facilitate native collaboration as standard.



Single source of truth

Enable remote working across disciplines, teams, geographies, and organizations with hybrid deployment, for example keeping project data centralized in the cloud while operating with local installs. AVEVA Unified Engineering enables you to monitor and manage project change centrally with a scalable tool that grows easily with your project needs. With a single source of project truth, you can empower your connected global workforce. AVEVA Unified Engineering works very well with large, complex projects and has no appreciable limit on project size.

Fast time to value

Deploy AVEVA Unified Engineering very quickly and effectively to your global teams for fast time to value. With hybrid deployment, you can significantly reduce required IT infrastructure and access centralized, up-to-date project data in the cloud.

Benefit from templatizing and re-using design work on similar projects and detailed project deliverables management. With AVEVA™ Flex, you can access flexible, adaptive licensing.

Increase project transparency

Clearly capture and present information to stakeholders (both EPCs and owner operators), with approved users able to access data stored in the cloud from anywhere. This creates centralized and collaborative data across the whole project, making reporting simple.

Create a living deliverable, rather than discrete, incremental document deliveries to enable continuous digital handover. This enables you to exchange data through both the design and operational stages of a project.

Work on both greenfield and brownfield projects and integrate existing asset data in a continuous feedback cycle. AVEVA Unified Engineering supports various project execution models; owner-driven, EPC-driven, or a combination of the two.

Create the foundation of your connected, living digital twin

AVEVA Unified Engineering lays the foundation for your digital twin. Users can build a digital asset during the design phase and carry it into future project phases, enabling continuous, digital handover.

Connect with the full AVEVA operations portfolio of industrial solutions including predictive analytics, real-time data, AI tools, and greenhouse gas tracking. Build a connected digital twin for use through the entire asset's life cycle and employ a life cycle management strategy for your capital projects.

Deliver and prove better project outcomes

Accurately capture detailed data for reporting and tracking KPIs, including sustainability reporting. Drive business growth with increased efficiency and reduced rework and risk. Build sustainable outcomes at design: optimize schedules, reduce waste, and reduce time on-site.

Flexible user access

Users can access via a desktop app or browser. The simple configuration and fast deployment deliver the shortest possible time to value. It includes out-of-the-box content set up for industry-standard engineering datasheets and reports.

The multi-project, multi-tenant tool brings diverse teams together in one digital environment. Users can access it everywhere, with multi-location, multi-region, and multi-organization access to a common project environment with appropriate data access controls. Simplify the owner/operator and EPC relationship with cross-account billing.

Open and agnostic

Experience easy migration from legacy products with open and agnostic software. AVEVA Unified Engineering has API-based integration for internal and third-party tools and no third-party dependencies.

Discipline benefits

Multidiscipline 3D design

Allow your teams and contractors to work on the same project data, at the same time. AVEVA Unified Engineering enables simultaneous design across mechanical, electrical, and structural disciplines:

- **A single integrated solution:** Keep data on the same platform for real-time exchange of information across global locations, discipline teams, and organizations.
- **Seamless collaboration:** Discipline engineers can simply sit down and do their job, while the benefits of working from a single source of data are natively available. Automatically update and track multidiscipline dependencies. For example, an electrical engineer can see mechanical equipment as it is added in real time and can adjust their designs (loads, supplies, cabling) accordingly.
- **A true, living, digital asset:** The foundation for a digital twin. Benefit from a digital asset rather than a collection of static documents and deliverables.
- **Integration with process simulation tools** (AVEVA™ Process Simulation) for users to incorporate upstream process calculations directly into their resultant equipment designs.

Data is located in a single platform, including graphical data, with no external licensing requirements. Users need no additional administrative gateways or data conversion for the engineering and design tools within AVEVA Unified Engineering.

The configurable status reporting feature lets users monitor progress, forecast workloads, and change control. With central reporting, users benefit from greater project transparency and continuous handover of project data and deliverables.

Rule-based, automatic drawing production means engineers create deliverables directly from the up-to-date digital asset.

Integrating interactable laser scan data into design work means users can ensure the digital asset is highly accurate post-construction. Simplify brownfield projects with on-site data. Create and maintain a valuable, living digital twin, rather than a static dataset locked in a hard drive.

IFC file import allows engineers to build BIM methodologies.

Process, PFD, and P&ID functionalities

AVEVA Unified Engineering includes tools for intelligent process design.

Design accurately and efficiently in a single, common, data-centric design environment that removes discipline barriers. Benefit from global work-sharing, for multi-location, multi-organization projects.

Manage intelligent schematics data concurrently with the 3D engineering data: 2D and 3D data are linked and work together to continuously inform all teams of changes and updates to the project design. With an asset-centric approach, teams can design the asset together collaboratively, rather than a discrete, siloed, document creation and deliverable approach.

AVEVA Unified Engineering integrates with procurement tools, allowing engineers to easily take designs into the construction phase, having a direct link with materials procurement and on-site activities.

Take non-intelligent legacy designs and drawings (static documentation and deliverables) and upgrade them into integrated, living digital representations of the asset that all teams can work simultaneously on across project disciplines. These then contribute to the foundation of a future digital twin.

Rapid templatization of repeated parts enables you to conduct repeated work as efficiently as possible.

Out-of-the-box capabilities lead to fast time to value. Engineers can set up and get to work fast with pre-made work files and project definitions available for immediate use and future editing. With specification-driven design, you can build and enforce specifications globally across the whole project.

Automated design functions, reporting, and deliverables generation enable you to design, report, and deliver from a living digital asset, quickly and efficiently.

Electrical and instrumentation

AVEVA Unified Engineering has many integrated capabilities for electrical and instrumentation engineers.

Its native functionality enables engineers to set up, begin, and become productive quickly and effectively with an out-of-the-box model based on ISO 15926 as well as a configurable electrical and instrumentation data model and class library.

Users can create schematic diagrams containing both electrical and instrumentation objects (creation of complex deliverables) to deliver modern, data-centric designs as part of a digital asset.

The software includes an easy-to-use user interface with drag and drop, configurable library data, template-driven enclosure design, automatic drawing production, and supported manual drawing production (as needed). The inbuilt graphics canvas connects to the project's underlying model data.

AVEVA Unified Engineering is flexible and scalable. Engineers can configure, edit, and enforce the data model across the entire project and graphics according to project requirements.

It includes accurate cable sizing to any design standard, which allows engineers to access accurate design lengths, installation methods, and cable layouts in the context of the entire digital asset to perform cable sizing calculations. Users can also quickly and easily produce reports from validated data.

Signal schematic creation on any electrical and instrumentation object enables users to generate signal (I/O) list across the entire project.

With ETAP integration (network electrical analysis, panel layouts, wiring diagrams, internal panel wiring), users can initiate projects in either AVEVA or ETAP tools and move seamlessly between the two.

Artificial Intelligence (AI)

AVEVA Unified Engineering has a host of inbuilt AI tools, designed to allow users to work more efficiently and effectively. Our AI tools augment user experience, assisting users to work smarter and faster.

Industrial AI assistant – AVEVA Proprietary cloud-based AI chat assistant

Talk directly to your engineering and design tools via AI to assist your teams with their project work. Soften the onboarding process for new staff, and capture and propagate institutional knowledge throughout your organization.

Predictive design AI assistant – Train ML models using your own data

Easily create your own machine learning (ML) models that address your own bespoke challenges without the need for coding. Upload your data, determine your parameters, and train and test your own models to optimize your inhouse processes.

Generative design AI assistant – In-built AI algorithms to build 3D models faster

Use AI to analyse design constraints and generate optimized layout options, for example pipe routing. Enabling faster, more informed decision-making, and ultimately more efficient designs ready for construction.

Intelligent Point Cloud Framework – Cloud-based AI classification of 3D laser scan data

AVEVA Unified Engineering automatically reads, imports, and displays point cloud data augmented with AI classification using AVEVA™ Point Cloud Manager and our industrial cloud platform, CONNECT. The augmented point cloud data is available in context, directly alongside the projects' integrated engineering and design data.

AVEVA Unified Engineering is available on CONNECT.

To learn more about what you can do with AVEVA Unified Engineering, visit: **aveva.com/en/products/unified-engineering**