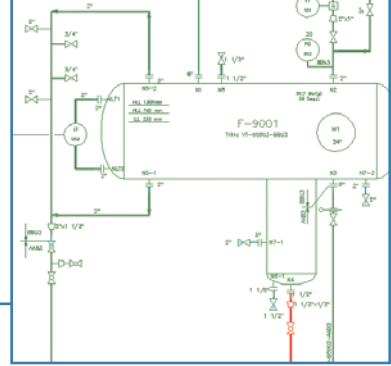


# AVEVA P&ID



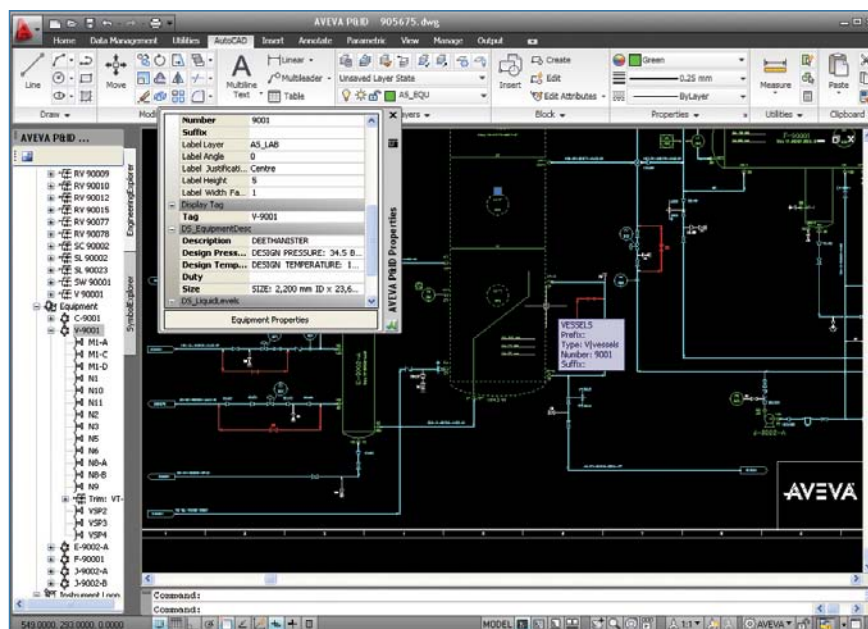
## An intelligent, AutoCAD-based P&ID design application

**AVEVA P&ID can be used as a stand-alone application or as a fully integrated key part of the AVEVA suite of products. It is quick to set up, easy to use and highly productive. It supports different engineering standards, individual company working methods and complex projects.**

The AVEVA P&ID system has been proven on numerous small- and large-scale projects across many industry sectors, including mega projects with many hundreds, or even thousands, of P&IDs on a single design. Its centralised administration approach reduces risk by preventing exposure to human error. AVEVA P&ID is suitable for basic and detailed engineering, for EPCs and Owner Operators. AVEVA P&ID has been used in the development of many projects worldwide, in all Plant and Marine sectors including nuclear.

AVEVA P&ID provides the user with the ability to ensure design integrity from the outset. Throughout the lifecycle of the design process this system allows the user to add real value to their design data within a predefined project environment.

AVEVA P&ID can be close-coupled to a database so that changes can be incorporated from the database to the P&ID and vice versa. AVEVA P&ID also stores all the intelligent engineering data onto the graphical entities in AutoCAD® drawings that can be used, if required, to regenerate the project database.



The AVEVA P&ID user interface, based on the familiar AutoCAD® environment

## Business Benefits

### Design efficiency

- Familiar AutoCAD® environment ensures a minimal learning curve and ready availability of skilled users.
- Easy to adopt.
- Intelligent data is created automatically as the design is drafted.
- Project-wide configuration, customisation, data control and reporting.

### Save time and cost

- Toolkit to facilitate upgrade of non-intelligent AutoCAD® drawings to intelligent AVEVA P&ID drawings.
- Design data can be easily reused and effectively reapplied on subsequent projects.
- Significantly reduces man-hours through the ability to bulk-modify existing data.
- Easy generation of configurable reports, with an Excel interface.

### Eliminate errors

- Intelligent data and configurable automatic error checking.
- Delivers ISO 15926 output to create a logical model.



# Key Features

## Standard AutoCAD® user interface and concepts

As an extension to familiar AutoCAD® features, P&ID enables new and experienced AutoCAD® personnel to quickly become efficient and effective. This product also supports the Microsoft® Office Fluent™ user interface menu system, capitalising on this common standard interface. P&ID is compliant with 32-bit and 64-bit versions of AutoCAD.

## Highly productive

P&ID offers a toolkit to enable the upgrade of non-intelligent AutoCAD® drawings. By adding intelligence to dumb AutoCAD® drawings, users are able to import them into the P&ID system without the need to redraft. Features such as 'Typicals' allow repeated parts of the design to be drawn once, but referenced many times. Instrument 'Patterns' are a simplified way of displaying instrumentation items, and copy-and-paste capabilities allow intelligent sections of drawings from previous or referenced projects to be rapidly reused on new projects.

## Database integration

P&ID integrates with AVEVA Engineering, AVEVA Instrumentation and AVEVA Electrical. Using AVEVA's powerful Compare and Update methods, common in all AVEVA products, data is published and retrieved to AVEVA Engineering.

Users can also export all of the intelligent data, such as lines, instruments, motors and valves, directly from AVEVA P&ID to AVEVA Instrumentation and AVEVA Electrical, and data from the instrumentation and electrical systems can be viewed on the P&ID drawing. It is also possible to access the AVEVA Instrumentation and AVEVA Electrical application datasheets from the P&ID in read-only mode, allowing for detailed review of the full specifications of an item.

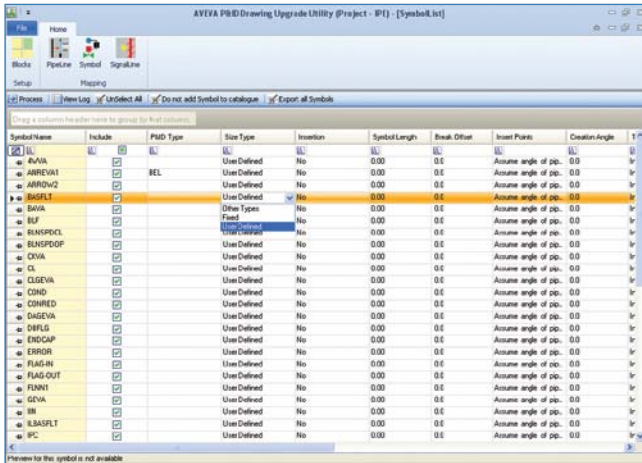
AVEVA P&ID design data can be saved directly to AVEVA PDMS, making it readily available to 3D designers. P&ID data can be compared in AVEVA Schematic 3D Integrator against the Plant or Marine 3D model allowing users to create and modify 3D components from the P&IDs. The Schematic Model Viewer provides a navigable presentation of the schematic model database, allowing the user to navigate to any object in the project topology.

AVEVA P&ID includes a database grid that is used to insert unassigned elements such as instruments and electrical equipment from AVEVA Instrumentation and AVEVA Electrical, unassigned page connectors, or any other unassigned items which are included in the P&ID database but which have not been inserted in the drawing. Attribute values can also be inserted and maintained from the grid.

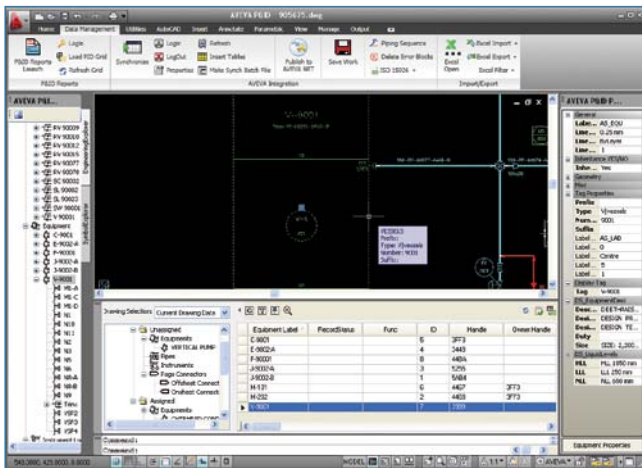
Overall, this integration provides a logically connected model that can be used with downstream engineering applications.

## Effective stand-alone application

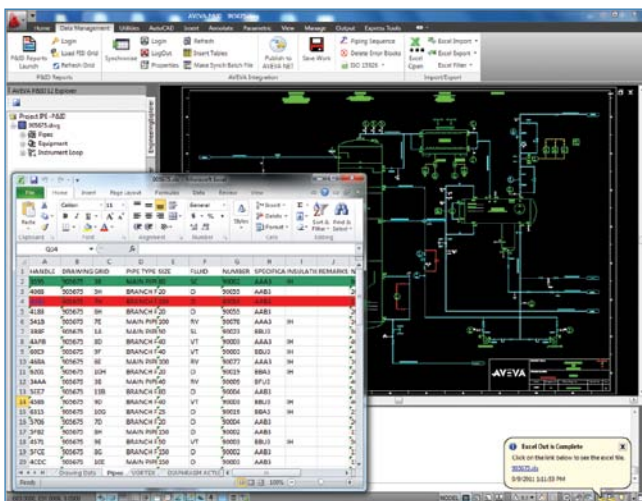
P&ID is an efficient and productive stand-alone application, ideal for remote working or for project subcontractors. P&IDs created or modified in stand-alone mode (offline) can be checked back in and synchronised with the project P&ID set.



AutoCAD® Dumb to Intelligent – upgrade facility



The P&ID grid



Direct Excel input to P&ID

## Data integrity and consistency

P&ID carries out many integrity checks to ensure that the data created is free of inconsistencies. For example, stand-alone duplicate tag checking can be carried out automatically across the entire set of project drawings. Checking can be configured for different equipment groups to warn of, or prevent, duplicate tag entries. Automatic error checking for unconnected instruments and inconsistencies in bore diameters is also provided.

P&ID delivers ISO 15926 output which creates a complete, connected, logical model within the AVEVA schematic model database. This allows AVEVA Schematic 3D Integrator to provide a P&ID/3D build, compare and update capability with PDMS. P&IDs can be saved as DGN, PDF and email, as well as in ISO 15926 format.

## Centralised project administration

Project administrators can configure P&ID on a project-wide basis to ensure consistent application of project rules. Crucially, the Project Administrator is password controlled to ensure a secure environment.

## Flexible project configuration

P&ID allows the use of many industry naming standards, such as ISA, KKS or PIP. It also allows for project configuration of attributes such as line styles, layers, colours, fonts and so on, to produce P&IDs which comply with project CAD standards.

## Easy-to-use symbol editor

New intelligent symbols can be added rapidly, or standard AutoCAD symbols can be reused by adding intelligence to them.

## Page connectors

AVEVA P&ID has intelligent page connectors that allow quick setting of the connections (unassign and assign page connectors) and navigation between P&ID diagrams.

## Intelligent assemblies

Groups of data can be saved and reinserted in the P&ID, including graphical assemblies, piping tags, assemblies, UDAs and datasets assemblies.

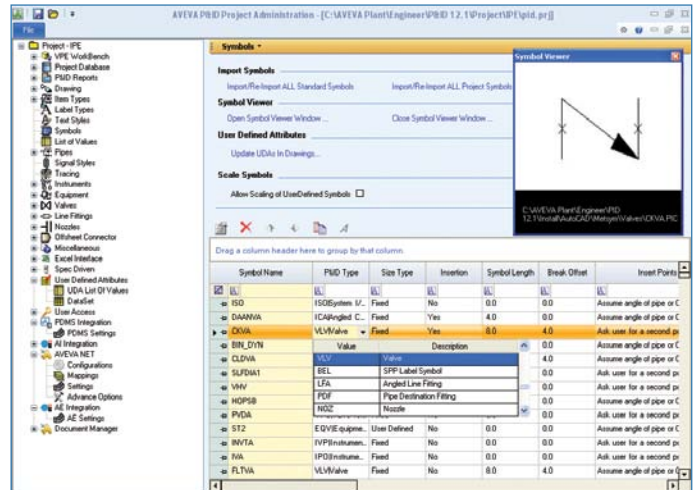
## Colouring utility

The P&ID application can also be used for different purposes, such as commissioning. This function allows the user to change the colours of multiple items, on multiple drawings within a project, based on P&ID attributes.

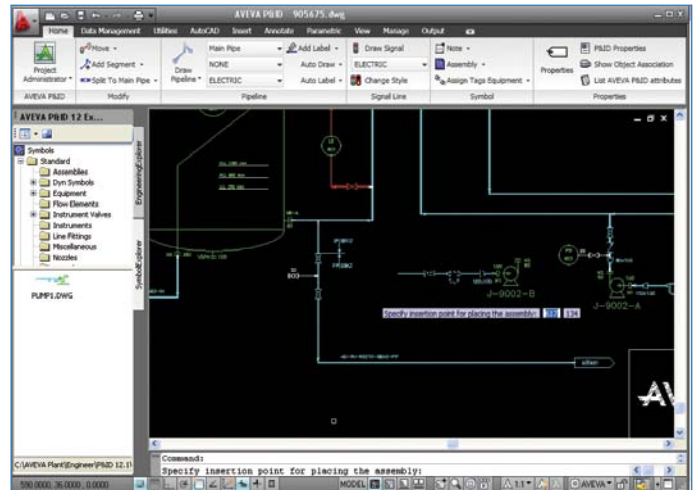
## Spec-driven P&IDs

The system can also be spec-driven and pipe specifications can be imported. A PML function can be adapted by customers to filter specification data from PDMS; the contents of the report can then be imported into a P&ID project to maintain quality and save the duplication of data.

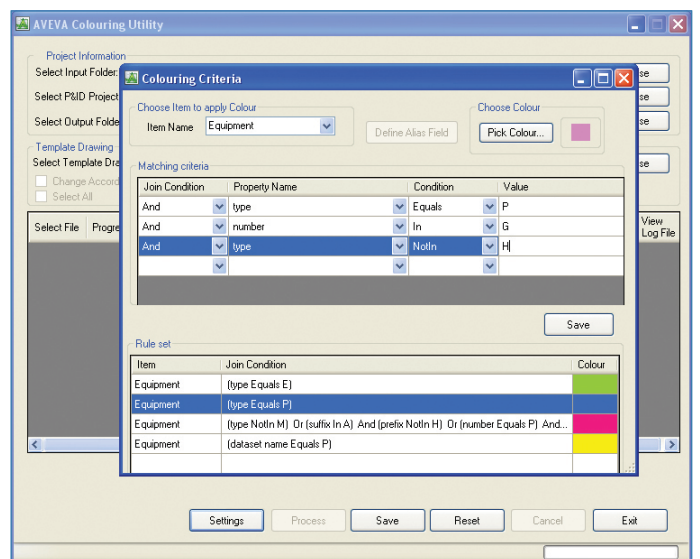
AVEVA P&ID has functionality within the Project Administration application that allows the user to configure the insertion of symbols depending on the piping specification; users can specify the symbols or group of symbols that can be inserted into each piping specification. Prevent, Warn and Ignore options are available when using this method. The user is also able to see the list of valid bore diameters when inserting reducer symbols.



Project administrator



Demonstration of a Group being inserted



The Colouring utility

# Key Features (continued)

## Excel interface

An Excel interface allows rapid extraction, editing and updating of P&ID data. Data values can be updated in Excel and imported back project-wide or just into an individual P&ID.

P&ID automatically validates imported project lists of values to identify inconsistencies and prevent unauthorised edits to the drawing. Individual Excel worksheets are configurable using the P&ID Administrator.

## P&ID Reports

P&ID Reports is a password-controlled function used to manage and report the P&ID data. This P&ID action can dynamically merge pipelines across sheets, and it allows the user to define and create line lists, equipment lists, materials and instruments, and so on. P&ID Reports can be used to create user-definable fields. The Excel interface will highlight changes when importing and exporting data.

## Automation functions

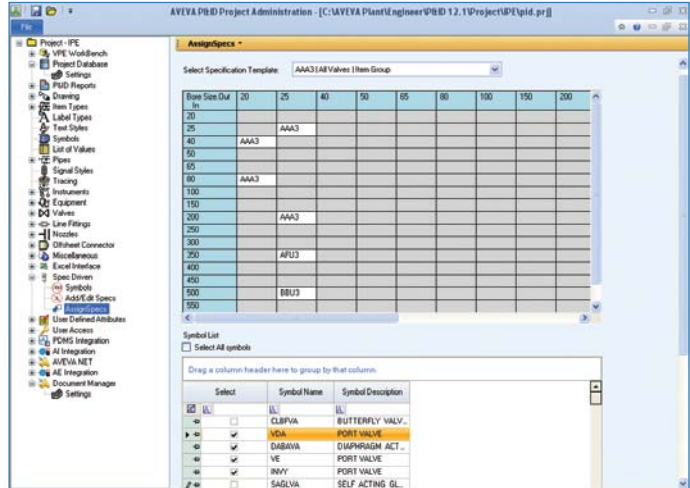
Automation functions make the P&ID drafting process fast and easy. P&IDs can be drawn once and reused within the design or elsewhere. Data from multiple P&IDs can be edited in bulk via the Excel interface.

These intelligent P&IDs, containing tagged items, quantities and connectivity data can be loaded into AVEVA Engineering for the production of project reports and datasheets. This highly productive system allows bulk P&ID editing, reduces errors and allows project-wide control. Properties, units, tag formats and graphics can be set in the Project Administrator and automatically updated in existing P&IDs.

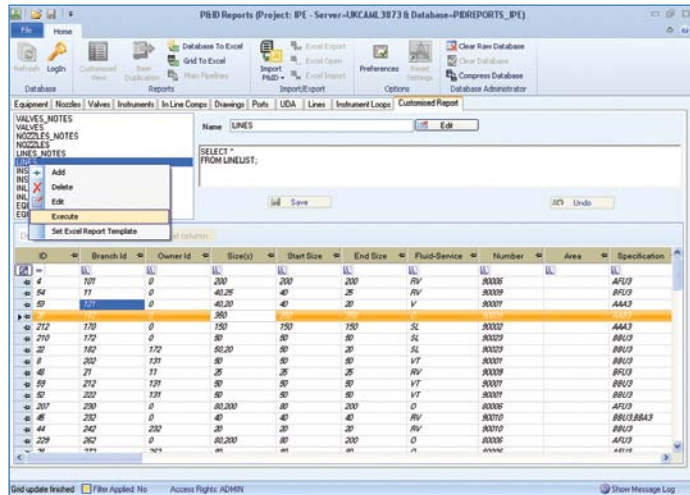
The data is then presented in the schematic database as a complete, connected, logical model of the plant.

## Document Manager

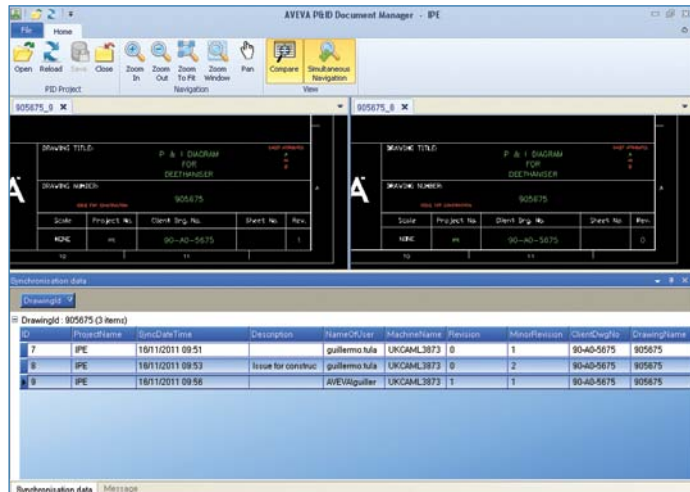
Versions of your drawings can be saved to the database at key stages, giving you the opportunity to go back and compare revisions or recover a previous version. Select two different revisions of the same drawing and visually compare the differences within the P&ID system. At each save or synchronise of the drawing a minor revision can be saved. When the drawing is issued a major revision is created.



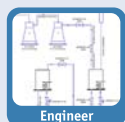
The spec-driven application



The P&ID Reports function



The Document Manager



AVEVA P&ID is one of AVEVA's Engineer products, which create schematics, diagrams, datasheets, engineering lists and indexes

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Information in this datasheet relates to product version 12.1 unless otherwise stated.