

Smap3D

DESIGNED FOR PRODUCTIVITY

PLANT DESIGN

Intelligent Plant Design





SUCCESSFUL WITH SMAP3D PLANT DESIGN



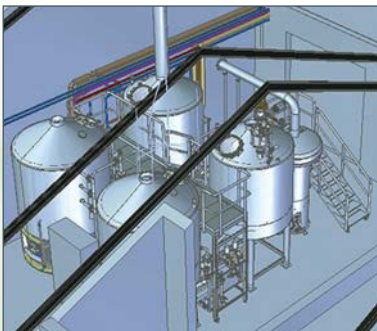
'We are already reaping the benefits of Smap3D Plant Design shortly after implementation: Automated data transfer to CAD, ERP and other systems not only improves the efficiency and speed of day-to-day design work, but other departments also benefit from the solution since relevant data are provided early on for further planning and changes'

KRONES AG, Germany
Volker Richter, Head of Mechanical and Process Engineering



'Smap3D pipe specs and Partfinder modules made it possible for me, to quickly and easily add the required tubes and supplier parts to my database, which can be used for a production drawing that is complete.'

Cougar Sales Inc., USA/TX
Daniel Leos, Product Development/Marketingspecs



'The integrated piping planning solution has made us up to three times faster than the previous approach.'

KASPAR SCHULZ, Germany
Christian Montag, Group Leader Construction



'By actively linking P&ID and 3D design in conjunction with the system's internal error correction, we were able to place our design focus even more on optimizing system efficiency and user friendliness. The result was exemplary drawings, which the globally operating and highly experienced client said they had never seen at this level of precision.'

Plan-eta GmbH, Germany
Jörg Müller, Managing

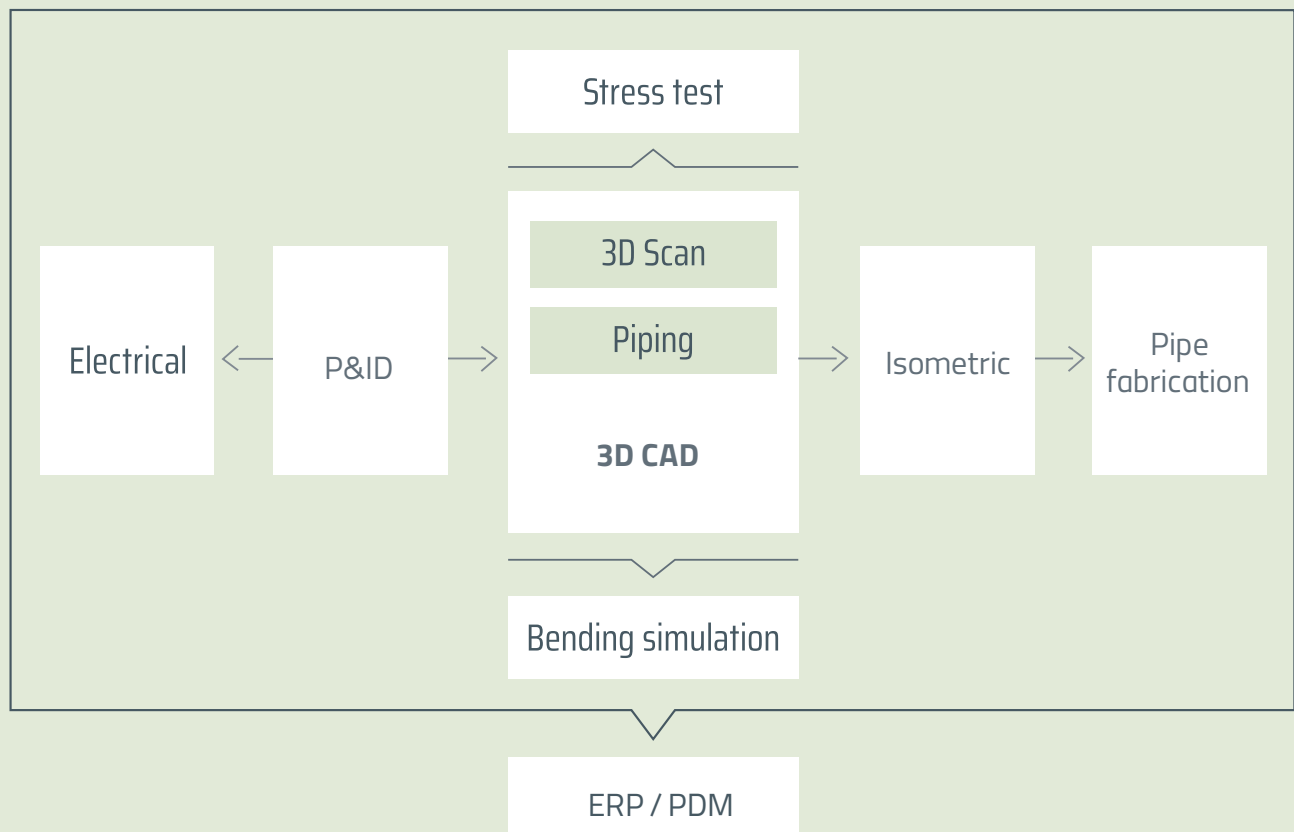
Smap3D Plant Design

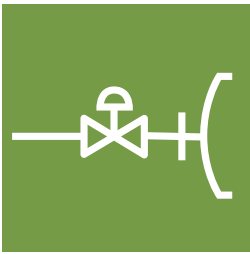
+ Intelligent 2D/3D plant and pipeline planning

Smap3D Plant Design is the 3D CAD software for easy and fast plant design. Planning of 3D piping systems for mechanical engineering, equipment construction and plant construction. For an optimal process chain in plant construction, the following can be achieved with Smap3D Plant Design an integrated software solution with a high degree of automation.

+ Simpler and safer plant planning with Smap3D: Optimize, network and accelerate planning processes

CONTINUOUS PROCESS RELIABILITY





Smapp3D P&ID

+ Create, change and manage database driven

With this database-driven, CAD-independent software, all relevant drawings, data, evaluations and tests can be generated in a single software package – from a single drawing to an entire project. Smapp3D P&ID automates and simplifies recurring tasks. All drawing sheets, project sheets and reports are template based and 100 % customizable.

- Seamless process through P&ID integration in Smapp3D Piping
- Dynamic lines (pipes) react automatically to disconnecting and connecting (e.g. when installing equipment).

- "Design Checks" for validating the completeness of individual P&ID drawings or to check the entire project for plausibility and accuracy.
- Automatic query of TAG numbers through the system.
- Expand the included symbol libraries (ISO/DIN, ISA) and component database with company-specific symbols and components.
- Export to DWG, DXF and Intelligent PDF possible.

+ P&ID To-Do list: The intelligent connection to 3D

The P&ID to-do list integrated in Smapp3D Plant Design is a function that provides an intelligent connection between Smapp3D P&ID Schematics and 3D Pipeline Design. The existing attributes of these symbols and lines, which are represented in the P&ID can be viewed

in 3D with the P&ID To-Do list and evaluated automatically. They serve the planner in 3D-CAD as the basis for the creation of 3D pipelines as well as to support the complete 3D plant design.



P&ID
2D-symbols
and attributes

Piping with
P&ID To-Do list
P&ID attributes in
3D CAD usable

Item	Attributes
PL 132	DN: 80, Größe: 80, Artikel-Nr.: 456277, Rohrklasse: Spec300, ITEMCODE: 456277, SPEC: Spec300, TYP: 80, TYPE: 80, BESCHREIBUNG: Pipeline, DESCRIPTION: Pipeline, DN: 80, Material: Steel
V2006	
A6205	
PL 132_100	
V2010	
P2002	

3D Pipeline
Result of
Piping automation



Smapp3D Piping

- + Mechanical design and pipeline planning directly in your 3D CAD environment
- + Convenient creation of 3D pipelines with pipe specs

With the highly integrated Smapp3D Piping, the 3D CAD system is a very powerful 3D plant engineering solution. This allows 3D piping to be used within the companies' own CAD system.

- Smapp3D Piping automatically generates three-dimensional pipelines with the right fittings.
- Smapp3D Piping supports the use of additional components (e.g. fittings, instruments). The components are added to the existing pipeline, which is cut accordingly. Required connections are added automatically (e.g. flanges).
- Changes to the pipe routing are automatically updated.
- Smapp3D Piping uses pipe specs in which the affiliation of components (fittings, armatures etc.) to pipe characteristics (diameter, pressure, medium, etc.) can be defined. With these pipe specs the various automations of the software are controlled.
- This technology makes the 3D piping design comfortable and reliable.
- Individual user errors are avoided.



Smapp3D Isometric

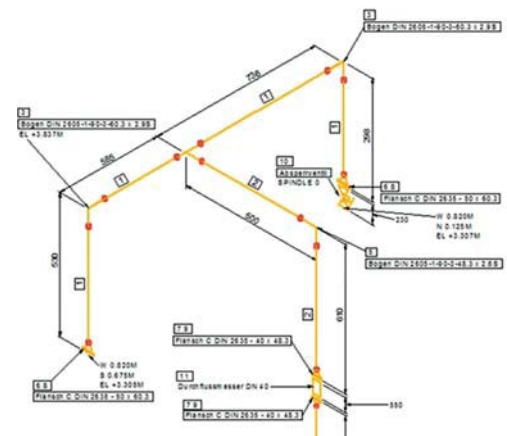
- + Automatic generation of isometric drawings
- + User-friendly generation of isometrics and reports

The software exports all information from the 3D pipelines and creates the isometric drawing automatically. The software uses the ISOGEN® kernel from the market leader Alias.

- Generation of Isometric drawings at the push of a button from the 3D assembly.
- Export of information for pipeline analysis (SIGMA ROHR2 / CEASAR II®).

The creation of the pipeline illustrations as well as all information – such as dimensions, forged hatching, annotations – done automatically via preset parameters (styles), which can be configured individually.

Various parts lists (e.g. material lists, welding lists) can be automatically displayed on the drawing. Moreover it can be exported to the ERP system (ASCII file).





Smap3D Electrical

The Smap3D Electrical user interface and data format are identical with the Smap3D P&ID. This guarantees an optimal exchange of information between process and electrical engineering. Smap3D Electrical is an advanced and innovative ECAD software for electrical engineering, automation, installation, pneumatics and hydraulics.

The software makes drawing your electrical diagrams very easy with powerful functions and automation. These include the component database, 48+ manufacturer part drawings and libraries, the automatic creation and updating of lists/reports.



Smap3D PDM/ERP Connector

For Smap3D P&ID we offer a neutral interface for the connection to any PDM or ERP system – independent of the manufacturer. The PDM connector ensures the smooth exchange of document information. The connection to ERP systems via the ERP connector enables the transfer of article information to the P&ID schematics.

Smapp3D Piping can also be fully integrated into PDM and ERP. Due to the deep integration in the CAD system, only native 3D CAD data is generated that can be managed directly by the PDM system. We support you with our documentation during the introduction of the PDM/ERP connector or offer implementation as a service on request.



Smapp3D Industrial Pipe Specs

„Industrial Pipe Specs“ for Smapp3D Plant Design significantly simplifies and speeds up pipeline design: The add-on contains predefined pipe specs for different

industries and sorts them according to different characteristics. This allows plant engineers to quickly find the appropriate pipe spec for individual adaptation.



Smap3D ScanToCAD

Smap3D ScanToCAD ensures that designers are able to transfer real existing surfaces and geometry from 3D scans to the CAD system faster, instead of drawing them themselves! The designer selects which surfaces and

geometries he needs. These are exported to the CAD system. Advantage: A big time-waster is eliminated - the data volume is reduced significantly!



Smap3D Bending-Simulation

Smap3D Bending-Simulation combines design and fabrication. The entire process is optimised and accelerated. The designer can quickly and easily check the bendability of pipes from the CAD system and, if necessary, visualize them in borderline cases. In addition to the geometry of the machine, the necessary kinematics for

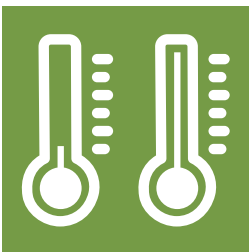
the production of a bending component is also mapped. It checks for collisions between tube and machine, which would make bending impossible in reality. A quick change in the design facilitates the production process and ensures that the tube bending components can be manufactured as they were designed.



Smap3D Pipe Fabrication

The combination of Smap3D with the PIPEFAB software also optimises and links process planning and control in pipe fabrication. These intelligent and modular software solutions for production optimises in pipeline construction facilitate the planning and organisation of all areas


of pipeline construction. The interaction of machine technology, measurement technology and software solutions in various combinations and expansion stages ultimately results in a scalable system which provides an optimum solution for every requirement.




Smap3D Stress Analysis


Smap3D Piping offers a suitable interface for all providers of stress simulation software. The PCF export transfers the complete geometry from Smap3D Piping into the simulation program: The engineer no longer needs to create an extra drawing for the stress

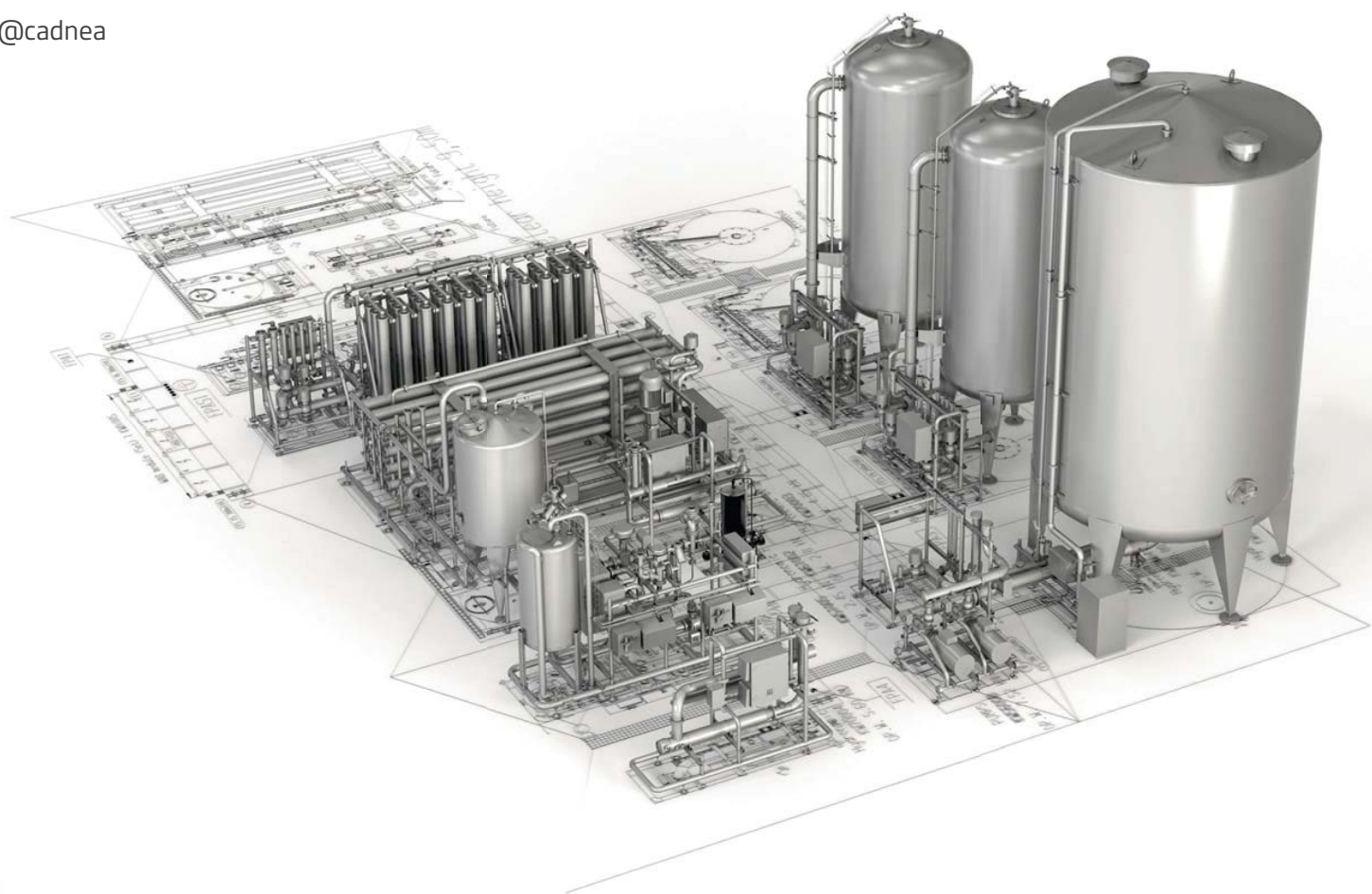
simulation! We will be happy to support you with our documentation during the introduction of the interface to your stress analysis software or offer implementation as a service.

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