Efficiency Through Innovation

Engineering Solutions

CAD
Mechanical Engineering
Sheet Metal

PDM
Glass/Metal/Facade Engineering
Plant Engineering
Steel Engineering
Product Configuration
Service

THE WORLD OF CAO AND PDM SOLUTIONS

UNLIMITED PERFORMANCE
Work productively right from the start, overcome limits, and achieve your goals faster!

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HiCAD - CAD for all-rounders and specialists

Whether mechanical or plant engineering, sheet metal processing, steel or metal engineering - each industry has its own special requirements. HiCAD, our long-established CAD system, offers a truly comprehensive "all-in-one" solution for a rapid and efficient product development across industries. HiCAD is the only CAD solution that offers, besides full 2-D/3-D associativity, all industry-specific functions and product data management tools in one system. Thanks to its modular structure, HiCAD is very flexible and can be easily adapted to company-specific requirements, whether in small companies or large, globally operating enterprises.

Hybrid Technology - Unique on the market

In practice, many projects cannot be clearly assigned to one particular industry, but are made up of components from various industries, e.g. factory plants containing mechanical engineering, sheet metal and plant engineering components, or cross-industry projects involving steel engineering and plant engineering elements. Here, too, HiCAD can offer the perfect solution, as our Hybrid Technology provides the flexibility and universality required for a successful product development. HiCAD is the only CAD solution that can cover all fields of engineering: Mechanical engineering, sheet metal processing, turnkey solutions for steel, metal and facade engineering, as well as an integrated product data management. If required, the whole range of options - whether 2-D/3-D design, extensive industry-specific functions or PDM functions - can be made available in one standardised user interface, sparing you tiresome switching between applications. This enormous range could be realised on the basis of our self-developed, flexible software kernel. Our kernel, which is unique on the market, provides a long-term basis for the realisation of innovative CAD techniques. And given that today's projects are constantly increasing in complexity, you will be ideally equipped for the future with HiCAD.

The benefits:

- Unique integration of high-end industry functionalities from a single source
- State-of-the-art 3-D designing technologies, free and parametric
- 2-D/3-D integration providing maximum flexibility for a changeover from 2-D to 3-D, and a wide range of company-specific use cases
- Unique comprehensive solution for innovative engineering in the fields of PLM, BIM and plant construction
- Modular structure allowing an adjustment to company-specific requirements
JENSEN is Germany’s leading developer and manufacturer of wood chipping machines. Jensen uses HiCAD for its design tasks. (Image: JENSEN Service GmbH)

2-D and 3-D
Industry-comprehensive
Online catalogues
Standard part libraries
Assembly-based modelling
Realistic 3-D models
Documents at the push of a button
Bending simulation
Automatic development
CAM interface
Mechanical Engineering and Sheet Metal

From simple machine parts to complex plants
Mechanical engineering is a very broad field, frequently involving components from different industries. Whether tooling machines, wind power stations, agricultural machines, engines, household appliances or complex production lines - mechanical engineering products can be found almost anywhere. The CAD system that is used for their development must be able to flexibly react to such product diversity. HiCAD users can face such tasks with composure, as HiCAD offers the whole range of required functions in one system.

- You use tried and tested 2-D and 3-D functions for your design tasks, automate your design processes by means of state-of-the-art variant technology, and master the construction of even the largest assemblies effortlessly.
- You have access to extensive standard part libraries and online catalogues (TraceParts, PART solutions etc.).
- All essential working documents such as production drawings, bills of materials, exploded views etc. are created by HiCAD automatically.
- HiCAD’s Hybrid Technology provides optimal support during cross-industry projects.

From draft to finished sheet metal part
Metal sheets are very versatile elements due to their stability and formability. Modern production technologies allow the creation of complex bent sheet components from one single piece, which are today used in almost all fields of the manufacturing industry. For an efficient sheet metal processing, HiCAD provides, thanks to a direct interface to a CAM system, a truly comprehensive solution for the entire process chain: From drafting, 3-D sheet design and NC machining through to the finished sheet metal bent part from PPS-controlled production. Sheet metal-specific functions, modern processing technologies, various automatisms such as bending simulation and automatic development, the taking into account of a wide range of manufacturing technologies and the automatic creation of all required manufacturing documents speed up the way to the finished sheet metal model significantly.

WITH HiCAD YOU CAN

MASTER THE MOST DEMANDING DESIGN TASKS EFFORTLESSLY!
Steel Engineering
Glass/Metal/Facade Engineering
Sheet Metal
Craftwork/Metal/Precision Engineering
Metalworking
BIM solution for Civil Engineering
Project safety

Sail-shaped facade at the Heuston Square in Dublin, consisting of steel, glass and sheet metal elements (Image: Arnold Matei CAD Planung und Konstruktion)
Steel and Metal Engineering

Perfection in steel, glass and metal
HiCAD enables you to realise even the most complex steel, glass, metal and facade engineering projects effortlessly with the help of state-of-the-art design technologies. Industry-specific functions, practice-oriented work techniques and a high degree of automation reduce lead times and increase product quality. Examples of this are the expert system for beams, profiles, sheets and plates, intelligent joints and connections, automatisms for production document creation, the bidirectional LogiKal® interface, automatic generation of complex facades, or the wizards for staircase and handrail construction. Whether complex supporting structures, custom-made glazing constructions for conservatories or house facades - with HiCAD you will always be on the safe side!

And, thanks to its modular structure, HiCAD also allows all-round users, such as metal working shops, or companies in the craftwork, metal and precision engineering industry, to realise all their design tasks with only one system.

Comprehensive Building Information Modelling (BIM) solution
In conjunction with the BIM/PLM suite, HiCAD becomes a unique, comprehensive solution for various design tasks and professional data and process management in civil engineering. HiCAD’s state-of-the-art design functions enable an effortless development of a wide range of steel and metal engineering constructions. All production, assembly and order documents are automatically generated and updated by means of integrated standard functionalities, and, via the PDM system HELiOS, safely managed in efficient databases. With its extensive functionalities for data and process management, HELiOS provides company-wide access to constantly updated project data and documents, such as 3-D models, production drawings, assembly drawings, bills of materials, NC data, E-mails, etc. In this way, the BIM/PLM suite ensures a safe and accurate realisation of all your projects.
2-D flow charts
Automatic pipeline isometry generation
3-D layout and pipeline planning
Animation
Freeform surfaces
API programming interface
PDM integration

Top: Mixing machine
Bottom: A saponification plant under construction
(Images: Sela Maschinen GmbH)
Plant Engineering, PDM and more

From flow chart to finished plant
The more complex a plant, the more difficult is the creation of corresponding layout and piping plans. This applies, for instance, to the fields of logistics, chemical engineering, food processing technology, heat and energy supply, cooling, air conditioning and ventilation technology. HiCAD enables you to plan and design even the most complex plants. Plant engineering-specific functions and automatisms facilitate design tasks and reduce the need for subsequent modifications significantly. HiCAD offers an optimal process chain for plant engineering, from 2-D flow charts as a basis for planning, 3-D layout plans and piping plans through to automatic derivation of isometric pipeline drawings, thus providing you with maximum planning safety.

State-of-the-art functions for individual requirements
Besides the basic modules and industry suites, HiCAD’s extension modules provide you with state-of-the-art functions for individual requirements, such as assembling, transport and motion simulations, functional analyses, animations, freeform surface modelling for the realisation of modern, extraordinary designs, additional automation options, or the API programming interface. With HiCAD you will be able to realise the full potential of your product models!

More productivity thanks to PDM integration
Almost 90% of the product costs are generated in the planning and engineering stage. A further increase in productivity can be achieved through the integration of HELiOS PDM (Product Data Management) in HiCAD. PDM enables a clearly structured management of large amounts of data, promotes re-use, creates a basis for an effective concurrent engineering and reduces costs throughout all departments of an enterprise.
SIAG Schaaf Industrie AG, one of the leading suppliers in the energy industry, uses HiCAD and HELiOS for the designing of offshore wind farms.
(Image: SIAG Engineering GmbH)

"WE ARE COMMITTED TO ENSURING CONSTANT TOP QUALITY OF OUR PRODUCTS. THIS IS PARTICULARLY IMPORTANT IN THE CASE OF OFFSHORE PLANTS, WHICH ARE EXPOSED TO EXTRAORDINARY STRAINS. THEREFORE, OUR ENGINEERS REQUIRE A RELIABLE PROCESS CHAIN FROM DESIGN THROUGH TO PRODUCTION. HiCAD AND HELiOS ENABLE US TO FULLY AND SAFELY CONTROL THE ENTIRE ENGINEERING PROCESS AND MAKE IT MORE TRANSPARENT."

AXEL KAISER, MANAGING DIRECTOR OF SIAG ENGINEERING GMBH
What our customers say...

Robert Förster, Chief Designer at Wächter Packautomatik GmbH & Co. KG: "As a hybrid CAD system, HiCAD provides us with all industry-specific functions that we need, enabling us to save time and production costs. Besides, thanks to its 2-D/3-D associativity, it allows a continued use of our existing 2-D data. The ISD has always provided us with an excellent customer service. During all of the projects we have realised in many years - from changeover to 3-D, new versions and workflows - we have always been optimally supported and looked after."

Markus Bense, Chief Designer at AXA Entwicklung- und Maschinenbau GmbH: "We have greatly benefited from HiCAD’s flexibility. As we have the option to design freely, i.e. without constraints, and also use parametric design for recurrent parts, we are enabled to choose the most efficient and suitable approach for any design task. With HiCAD we can work much more productively than with a system based on a purely parametric or free design approach."

Sven Schreiner, Grebenauer Metallbau Schreiner GmbH: "In the field of 3-D metal and facade engineering, HiCAD is presently unrivalled on the market. Outstanding features of the CAD system are the metal engineering plugin with full 2-D/3-D associativity, and the really excellent sheet metal functionality."

Peter Zellmann, Managing Director at OSBERMA Zellmann: "HiCAD is an extremely user-friendly CAD system that enables us to work very fast and productively. Thanks to HiCAD we could reduce the workload in our engineering department significantly. The realistic 3-D models that we create already during the quotation phase help us a great deal to put our arguments across in sales talks."

Josef Höltermann, Project Manager at PlanET Biogastechnik GmbH: "It was important for us to find a truly universal solution which could, as a hybrid system, cover all our functional requirements integrated in one single system. In a benchmarking, HiCAD was the only system that could fulfil this criterion. All departments, from quality assurance to plant planning, have lossless access to a standardised product model as a common working basis."

The PlanET Biogastechnik GmbH offers its customers a comprehensive range of services, from conception and planning through to plant engineering and biological support by its in-house laboratory.

(Images: PlanET Biogastechnik GmbH)
ERCmachinery manufactures machines for a mechanised large-scale processing of dry onions, green top onions, shallots and onion sets. Onion processing machine (Images: ERCmachinery bv)

Rapid familiarisation
Great user-friendliness
Intuitive operation
Context-sensitive GUI
Individually adaptable
64Bit and Multicore support
Safe data exchange

ERCmachinery manufactures machines for a mechanised large-scale processing of dry onions, green top onions, shallots and onion sets. Onion processing machine (Images: ERCmachinery bv)
Work productively right from the start

**Rapid familiarisation, easy operation**
HiCAD is very user-friendly and easy to operate. The user interface is context-sensitive throughout, from the multifunctional toolbars in Windows “Ribbons” style and the intelligent context menus to the Start Centre. This reduces the time required for familiarisation, minimises training costs and ensures a productive working right from the start!

**Safeguarded know-how, lossless data exchange**
In case of a system change, or a changeover from 2-D to 3-D, you do not need to start from scratch, but can re-use and process existing CAD data in HiCAD. Direct interfaces to all common CAD systems, as well as numerous neutral formats such as DXF, IGES or STEP, ensure a lossless data exchange and safe cooperation with customers, partners and suppliers.

**Fast and easy designing**
Due to the ever-increasing complexity of products, assemblies can often consist of several tens of thousands of parts - this applies in particular to the fields of heavy engineering and special machine construction. But even such extremely large models can be easily and efficiently visualised and processed with HiCAD, thanks to its unique storage management, 64Bit and Multicore capability. No matter how complex your products are, the integrated browser constantly provides a maximum of transparency and clarity.

**Individual adaptability**
Whether small production facility or large, globally active enterprise - HiCAD is extremely flexible and suitable for any use case. Thanks to its modular structure it can be easily adapted to company-specific requirements and integrated into existing software environments. Starting from the basic module or an industry suite, HiCAD can be supplemented with further modules at any time.
2-D and 3-D
For all industries
Hybrid Technology
Free modelling
Free choice of design approach
Parametric modelling
State-of-the-art functions
Standard part libraries
Associative, flexible, innovative

2-D and 3-D in one system
Although 3-D CAD provides a significant competitive advantage, a large part of the design tasks is, even today, still performed in 2-D. HiCAD is a universal and fully associative 2-D/3-D CAD system that allows you to use 2-D and 3-D objects in one file, thus enabling you to manage your existing 2-D data while designing in 3-D. HiCAD leaves it up to you how to proceed. You can either develop your models directly in 3-D and automatically derive the corresponding 2-D production drawings, or continue to work in 2-D during the planning stage, add 3-D objects to your drawing, and automatically convert it to a 3-D model drawing later. No matter which approach you prefer, changes in the 2-D drawing will automatically be applied to the 3-D model drawing and vice versa.

Designing without constraints
You can decide for yourself which work technique is best suited for your requirements: Use free modelling for quick corrections or the processing of imported drawings. Or use parametric modelling to record the design history, enabling you to perform design changes at the push of a button at a later time. Arbitrary switching between these work techniques gives you a maximum of flexibility.

State-of-the-art functions for all use cases
No matter whether you design in 2-D or 3-D, HiCAD provides optimal support throughout the complete product development process with state-of-the-art 2-D drawing functions, innovative top-level 3-D modelling and special industry know-how - from the first draft through to the automatic generation of all relevant production documents.

Save time by re-use of data
HiCAD helps you streamline routine tasks and speed up design processes. You can, for instance, combine frequently used assemblies in company-specific factory standard catalogues, or use the extensive standard part catalogues to fit predefined elements and complete bolting sets without additional design effort. Furthermore, you have direct access to online catalogues containing millions of parts from all important suppliers.
Berner Ladenbau offers high-quality functionality and design concepts in shop fitting. From flagship store and branch design solutions to custom-made solutions - any customer wish can be realised on the basis of flexible shop fitting concepts. The images show various shop fitting concepts for bakeries, designed with HiCAD and rendered subsequently.

(Images: Berner Ladenbau GmbH & Co. KG)
Freeing up resources for a safe planning

**Automate your design processes**

HiCAD offers automation options that open up new perspectives in product development. For instance, entire design processes can be saved as variants and reused or modified for other design tasks. These can be use cases from a wide range of industries, such as steel engineering joints, sheet metal stamping tools or fastening brackets, mechanical engineering shaft-hub connections, and much more. What is special about these automation options is that the "intelligent" variants automatically adapt to any fitting situation.

**Optimise your planning safety and reactivity**

All essential production documents, such as production drawings, detail drawings, exploded views or bills of materials, can be derived from the 3-D model at the push of a button, and updated automatically in case of design modifications. Simulation and analysis functions as well as collision checks enable an early detection and elimination of possible errors in the product model. In this way, expensive, time-consuming rework can be avoided right from the start. In addition, HiCAD also allows you to conveniently apply design changes at later stages, thus enabling you to promptly react to ad hoc customer wishes. Furthermore, a wide range of viewing options helps you assess the quality of the created product models. With their help, the model can be viewed and processed from any perspective - including individual sectional and detail views.

**Persuade your customers by good arguments**

3-D models can already be visualised in great detail during early design stages. HiCAD offers a wide range of functions to represent your models as realistically as possible: For instance, you can use various lighting, textures or background panoramas. If required, you can also simulate environments, which are reflected on the surfaces of your model. In this way, the product can be presented in a photorealistic manner even before its actual creation, thus providing your sales and marketing department with excellent arguments and additional support in sales talks, on trade fairs, or during presentations.

**HiCAD HELPS YOU AVOID**

**EXPENSIVE AND TIME-CONSUMING REWORK,**

**ENABLING YOU TO FREE UP**

**RESOURCES AND TIME FOR**

**NEW DEVELOPMENTS!**
EFFICIENT PRODUCT DATA MANAGEMENT

Redundance-free data management
Optimised process flows
Automated workflows
Access and version management
General safety
Worldwide communication
Modular structure
HELiOS - For safe business processes

In product development, PDM systems have recently become established as efficient tools that help you increase your productivity. In other departments, too, staff members are facing similar challenges - an ever-growing amount of data and the need to realise complex processes in an error-free and safe manner. Not infrequently do time-consuming, redundant tasks, such as the retrieval and printing of documents, constitute a major part of the daily work in an enterprise. The large amount of data relevant to the product lifecycle in conjunction with the multitude of data creating systems such as MS Office, CAD or CAM systems poses considerable problems with respect to process organisation and the communication between departments. One of the principal tasks of a PDM system must therefore consist in a safe and reliable distribution of data, at any place and any time. However, a smooth cooperation does not only require physical access to data, but also a controllable communication between the parties involved in a project - especially if they are spread across different locations.

Our PDM system HELiOS solves these tasks effortlessly. The document management enables a structured organisation of the central file storage. Here, all data and documents relevant to the product are made available in a well-structured, clearly arranged manner and are constantly kept up to date. In addition, HELiOS coordinates and manages all processes that are relevant to the production, either in a time-controlled or event-controlled manner. Order processing steps, work instructions and other information are automatically generated and forwarded to the staff members, which results in a significant reduction of lead times.

The benefits:

- Management, distribution and monitoring of all product data and documents
- More productivity through standardisation
- Optimised processes, with graphical workflows and access rights control
- Fast and safe communication - across locations and world-wide
- Unlimited flexibility due to modular structure and integration of other systems

REDUCE THE AMOUNT OF DATA AND OPTIMISE YOUR PROCESSES!
CUSTOMIZED PRODUCTS AT THE PUSH OF A BUTTON

Faster order processing
Reinforced customer loyalty
Shortened engineering processes
Higher product quality
Faster proposal preparation
Suitable for all industries
CAD-, ERP- and PDM-independent
HELiCON - The product configuration tool

Today the manufacturing industry has to deal not only with an increasing product complexity, but also with a growing demand for customised products. Nowadays, more and more customers require products that go beyond the standard product line and are tailored to their specific needs. The organisational and logistical challenge many companies are facing consists in having to deliver customised products at short notice, timely and in top quality. A manual creation of proposals for customised products, however, often requires too much time and personnel.

These problems can be remedied by HELiCON, a tool enabling you to configure customer-specific products in only a few minutes, create the corresponding proposals at the push of a button, and thus enabling you to react much faster to your customers’ wishes. HELiCON is a CAD-, ERP- and PDM-independent solution that allows a rapid and efficient generation of flexible product configurators. These configurators instantly supply all relevant product data and specifications, from complete proposals with bills of materials and workshop drawings through to the finished virtual 3-D model. The open architecture allows an easy integration of other software solutions existing in your company.

Whether complex plant or simple assembly, HELiCON’s configuration system can map and visualise any assembled product from whatever industry. In only a few minutes, customer-specific products and the corresponding proposals can be generated at the push of a button, enabling a prompt realisation of customer wishes. HELiCON confers significant advantages throughout all departments of your company and helps you achieve maximum productivity and customer satisfaction.

The benefits:
- Less time required for product development and proposal preparation
- Significant improvement of product quality
- Applicable for all use cases
- Easy extension and maintenance, even without consulting
- Maximum flexibility due to modular structure and integration into other applications

REDUCE THE TIME FOR YOUR DESIGN AND ENGINEERING PROCESSES FROM DAYS TO MINUTES!
ONE-STOP SOLUTIONS

Decades of experience

- **R&D**
- CAD and PDM
- Product Configuration
- Direct Sales
- Consulting
- Installation
- Training
- Maintenance
- Hotline
ISD - Your competent partner

As one of the leading providers of CAD, PDM and automation software, the ISD Group develops solutions for the entire process chain. For 35 years, we have constantly been setting new benchmarks in productivity and innovation. Our long-established software products HiCAD, HELiOS and HELiCON help our customers realise the most complex engineering tasks in all fields of industry. The ISD Group offers an innovative product portfolio for all areas of the engineering process, and is the only company in the world capable of supplying a completely standardised platform that is perfectly suited for cross-industry projects. We do not only develop and sell our software products, but also offer a wide range of accompanying services, and have specialists for consulting, installation, training, maintenance, and a hotline in place. We are therefore able to provide you with a truly comprehensive, one-stop service package.

Consulting
In our striving for an optimal solution we aim for a close cooperation with our customers right from the start, including a thorough analysis of their requirements. If required, we create a customer-specific solution and carry out the best possible integration into the existing software environment. If desired by the customer, we will continue to provide support after the roll-out, in the production and optimisation phase.

Training
The effective use of a system depends on the way in which its users are trained. The ISD Group offers you a comprehensive, didactically balanced training program. Training courses are held in ISD’s modern lecture rooms. If desired, individual training can also be arranged at your company.

Services
With our software maintenance contract you can benefit from new product features and enhancements coming with updates and new releases. After the implementation of a product, our hotline ensures competent support, promising to find an answer to your questions as quickly as possible.