A Concept-to-Commissioning Plant Engineering Solution with Centralized Database

CADISON®

Complete Engineering Solutions in a Single Application

ITandFactory offers Multi-disciplinary Engineering Solutions

ITandFactory is a solution provider in plant engineering industry that develops and distributes engineering software. Our software is designed to support our customers in project planning and development of plants in various industries (e.g., chemical, pharmaceutical, food, beverage, oil and gas). Our mission is to provide you with CADISON, a multidisciplinary 3D engineering software that significantly increases your efficiency in project engineering. The strength of this solution lies in the engineering data and graphics-driven approach with a single common database, which provides tremendous flexibility for companies.

CADISON increases efficiency during project execution

CADISON is a fully integrated multi-disciplinary engineering software solution that combines the entire engineering workflow in one system. This applies to both the non-graphical and the graphical data (P&ID, circuit diagram, 3D model). The project team members have access to the latest project data in all necessary project views and all disciplines at all times. CADISON supports the user through its comprehensive AutoCAD integration, offering a tremendous amount of flexibility for customizing one's own workflow. In addition, the necessary catalogs can be quickly and efficiently customized to meet company specific standards. Reports, datasheets and isometric drawings are generated automatically and 2D layout drawings are generated in a semi-automated manner. Thereby drastically reducing overall time spent on the project. CADISON incorporates integrated revision control and enables project coordination by using the latest tools. A built-in and neutral ERP interface to support the resource planning of an entire company as well as Interfaces for widely used pipeline analysis programs assist users in managing their projects.

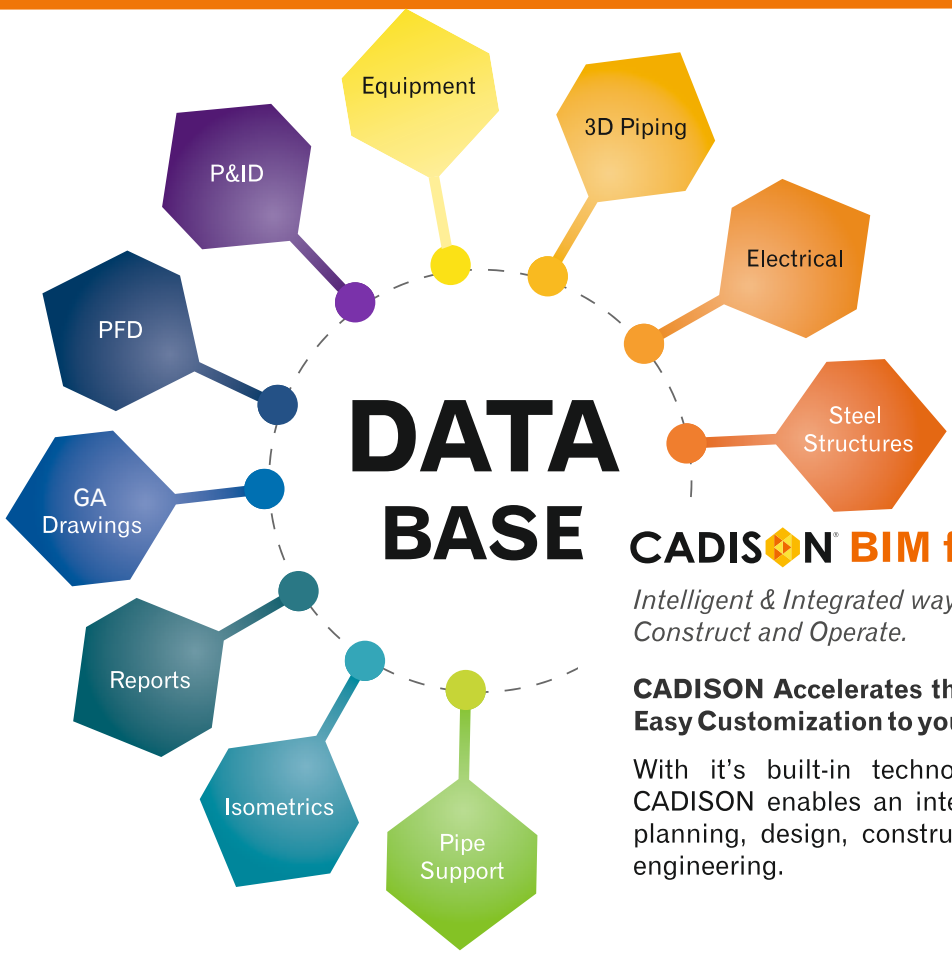
Ensure business benefits for your company

- Increase Competitiveness, Engineering Efficiency and Productivity
- Integrated engineering solution from proposal engineering to construction phase
- Gain competitive edge, Quick time to market with multi-discipline & multi-user environment
- Seamless integration of CADISON into the user's business work flow (with interfaces to ERP, pipeline analysis programs, document management, etc.)
- Open standards and cutting-edge technology provide maximum investment security

Increase Competitiveness

Increasing competition is a challenge faced by us every day. Several interfaces and possible transmission errors lead to higher costs, longer project durations and thus lower margins. To break out of this spiral and to improve project efficiency / profitability, there is no other option but to integrate the entire engineering process with a Concept-to-Commissioning Plant Engineering Solution.

Until recently, the use of pure CAD systems was the right way to improve competitiveness, but today it is imperative for organizations to move to the next level of optimization through integration of the entire engineering process. The faster implementation of your projects would mean, effective utilization of your valuable time, and more efficient use of limited engineering resource.



CADISON BIM for Plant Engineering

Intelligent & Integrated way to Plan, Design, Collaborate, Construct and Operate.

CADISON Accelerates the Planning Process and Allows Easy Customization to your Company Standards.

With it's built-in technology and modular architecture CADISON enables an intelligent model based process for planning, design, construction and management of plant engineering.

CADISON is a fully-integrated multi-disciplinary solution for:

- Spec-driven Design
- Cost Calculation & Project Cost Estimation
- Conceptual Engineering
- Intelligent P&IDs
- Intelligent 3D Piping Design
- Intelligent Electrical Diagrams
- Cable Trays Design
- Cable Sizing Calculation
- Steel Layout
- Catalogs & Equipment Modeling
- Piping Supports
- ISOGEN Isometrics
- Ducting & Ventilation
- Project Status Check
- Design Check & Collision Check with Navisworks
- Interfaces - ERP, ROHR2, CAESAR II, ETAP, Inventor and IFC

CADISON Consulting and Customer Support

We offer comprehensive consulting and services related to implementation and working with CADISON. This includes:

- Installation support: Setting up the CADISON system environment
- General customizing of the system
- Object model customization
- Project support
- Creation and maintenance of symbols, report templates and manufacturer catalogs
- Workshops and Webinars
- Training & Documentation tutorials

CADISON-Module

The Application Areas & Users of CADISON Modules

Process and Project engineers use CADISON Project Engineer to structure the plants and for detailing the technical as well as commercial data.

Project Managers and Plant Operators can view the planning data and documentation with the CADISON Project Navigator.

P&ID Planners use the CADISON P&ID Designer or the P&ID Designer for Visio to create Basic Flow Diagrams, Process Flow Diagrams and even detailed P&IDs.

Layout and Piping Planners use the CADISON 3D Designer to ensure dimensionally accurate 3D planning right from start to the final isometric drawing.

Business Integrators are responsible for integrating the engineering workflow into the company processes. Therefore, the CADISON API as well as complimentary modules for document management and ERP integration are available. Interfaces to stress analysis programs (ROHR2/CAESAR II) perfectly complement CADISON as a complete solution.

Instrumentation & Control Engineers and Electrical Engineers create the concrete instrumentation all the way to routing and control cabinet planning with CADISON Electrical Designer.

Components and Pipe Class Manufacturers deploy CADISON MATPIPE to create project and company standards for all planning trades.

Operators organize and schedule their recurring maintenance and inspections with the CADISON Maintenance Module.

CADISON modules at a glance

CADISON Project Engineer: A non–CAD solution for Project Planning, Cost Estimation, Engineering Information & Document Management, Workflow & Change management throughout the Plant Design Life Cycle. It enables Managers / Leads to plan conceptual engineering, generate bidding proposals and schedule tasks with or without MS Project. This helps to track and monitor the complete project data / information from Concept-to-Commissioning. Also, the CAD-independent 3D graphic preview feature is in-built in CADISON Project Engineer.

CADISON P&ID Designer: A comprehensive spec-driven module for the 'creation of Intelligent PFDs / P&IDs' and 'Instrumentations (measurements, hook-ups & I/Os)'. It can perform Pipeline Sizing and Utility Pump Sizing Calculations for optimum selection of equipment at the P&ID stage. It supports various standards (DIN, EN, ISO 10628, ISA 5.1, ANSI, etc.) and can be easily adapted to the company standards and reporting formats. Preconfigured-design rule-based checks for Data and Drawing Validation, built-in capabilities such as Symbols and Construction sets creation, Auto Legend and Auto Tagging, etc. and PDF Redlining for design reviews significantly reduce the drafting efforts and improves the design process. The 'Process Documentor' feature enables the documentation of each Process steps, e.g., to define starting, cleaning or shut down of equipments / open and close of valves for operation & maintenance or to show media separation ways.

CADISON 3D Designer: A complete 3D plant design module for Plant Layout, Pipe Routing, Equipment Modeling, General Arrangement & Isometric Drawing creation and Report Generation (BOMs, MTO & Datasheets). It provides the users with various time-saving wizard and design assistant such as Section Box for GA drawing creation, 'Tank Assistant' & 'Nozzle Assistant' for creating 3D vessels and tanks. Data export and import in neutral CAD formats and 'PCF import' of existing isometrics brings 3D Designer to the core of the Plant design. The unique ability to graphically synchronize and validate the 3D Plant information with P&IDs caters to Process design consistency and operational safety at all design stages. It is enhanced with Web-Based 3D Model Redlining and Measurement for review & collaboration.

CADISON Electrical Designer: A comprehensive solution for Electrical Engineering Design, Documentation and Management. It is a unique combination of tools for 2D Schematics & Controls Designs; Sizing Calculations (Cables, Earthing, Transformers & UPS); with 3D Conduits & Trenches, 3D Cable Tray & Panel Layouts. Productivity tools such as automatic generation of Terminal Drawings, Contact Sets, PLC I/O Board Drawings and Reports Generation (BOMs, MTO & lists) reduce the drafting time significantly and PDF Redlining feature improves the design process.

CADISON Steel Layout: A wizard-driven module for planning and creating 3D Steel Structures like Ladders, Staircases, Platforms, Handrails, Trusses, Water Tanks and Custom Assemblies such as Pipe supports, Spiral staircases, etc. It's SDNF export interface enables the users to export steel structure data to Tekla and Advance Steel for detailing. It is configurable to adapt design standard and custom guidelines for validation of parameters and steel profiles for improved designs.

CADISON MATPIPE: A Parametric Catalog Engine for creation and management of Pipe Classes, 3D Catalog Objects and integration of Manufacturer's Catalog with the import & export functionality for maintenance. Database of Templates, Piping Component Libraries from Design Standards and an extensive list of Catalogs from prominent vendors are also available. User Management with Revisions of Master & Working Catalogs enable to standardize and maintain versions (replica and extended replicas) of catalogs at the organization level. The 'Catalog2Cloud' feature enables a central Catalog Management System over the intranet or Internet for multi-site catalog management.

CADISON Pipe Support Modeler: An intelligent wizard for Standard Pipe Supports to the Users to create and edit different types of pre-defined secondary supports in an easy and intuitive manner. Users can also quickly create non-standard pipe supports manually. Automatic hook-ups (production drawings) creation and Reports generation reduces the documentation efforts. It can further be used for Electrical Cable Trays, HVAC Ducting Systems and Bus-ducts Supports as well. Standard catalogs for steel beams and pipe supports are available from MATPIPE.

CADISON P&ID Designer for Visio: A spec-driven process engineering solution for Conceptual & Detailed Engineering that can be used for Proposal Generation. This is an easy and quick to use tool to create intelligent P&IDs and PFDs using MS Visio® Platform and still all the data is integrated with other CADISON modules in real-time. Its ability to export to AutoCAD, Pipe and Pump Sizing, Generation of Automatic Legend, Tagging, Report and integration with the 3D Designer makes it a powerful tool for the process industry.

CADISON Project Navigator: A navigation tool to access engineering data of a project with a user interface similar to the Project Engineer module. It can be used for project review and also for further processing of project data during the plant operation and maintenance, which also serves as a paperless documentation platform.

CADISON Archiver & Browser: An independent tool for Archiving of completed project databases from CADISON production environment. Archived Projects can be quickly and easily viewed with CADISON Archive Browser like a knowledge management platform. The archived projects can be re-activated or restored to work on future developments at any time.

CADISON Maintenance: The CADISON Maintenance Management Tool is a tool for planning, managing and documenting technical inspection and notifications, schedule / planning of maintenance, repairs, and other measures for various objects in plant to maintain the operations efficient and reduce breakdowns. It also includes scheduling and tracking deadlines for next maintenance after the service is completed. It supports creation of test and inspection reports in different forms and management of the test history for corrective and preventive maintenance.

CADISON ROHR2 / CAESAR II Interface: It has the feature and ability to export all pipeline systems created with CADISON 3D Designer to ROHR2 or CAESAR II for the quick and accurate static and dynamic analysis of piping system. All the required information will be completely exported in the form of .ntr files in ROHR2 or .cii file in CAESAR II for analysis based on user-defined variables and accepted industry guidelines.

CADISON ERP Interface: CADISON provides interface with well-known ERP systems like SAP, Movex, Infor and others for dynamic data exchange. It establishes a mutual connection wherein Orders like purchase requisition can be directly released and also controlled within engineering workflow.

CADISON Inventor Interface: It enables the Users to import an Autodesk Inventor part or assembly file along with the inventor properties in SAT and XML format into the CADISON environment as a CADISON object. It helps to import & update objects from the Inventor original / updated model.

CADISON IFC interface: This provides exchange of graphics and data between AEC industry tools and CADISON 3D Designer with import revisions. The interface supports IFC2x3 and IFC4 configuration mappings for exchange. All object data in IFC can be imported into CADISON objects. Export process supports mapping of CADISON object properties with AEC objects.

CADISON Equipment Simplifier: A customized wizard designed for the automatic simplification of large equipment models. It reduces the size and complexity of models upto 90% from different CAD formats with (interactive) manual or auto mode options and exports the results in DWG for CADISON.

CADISON Application Programming Interface: CADISON API enables the Users to integrate CADISON engineering workflow with business workflow and organization specific document management tool. API developed for external access of CADISON data, contents, structures and even dynamic exchange of data / information.

CADISON PED: This module facilitates the automated classification of the pipelines and equipments into the corresponding category of the Pressure Equipment Directive (RL 2014/68/EU) - including determination of the necessary assessment modules. The result of the calculation can be tracked and checked both at the object itself, across the project and also in a graphical format.

Exemplary customer projects

Power

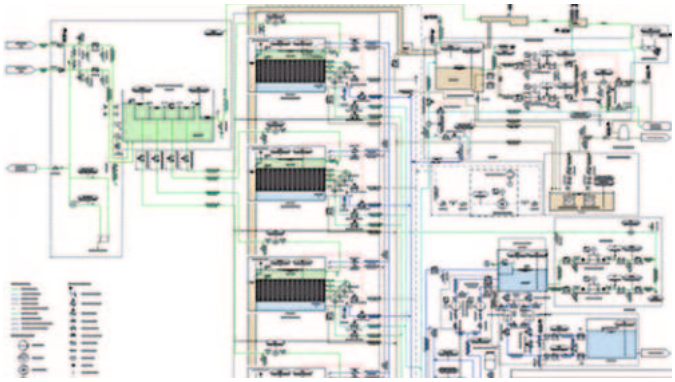
A leading gas network with more than 12000 kilometers length, which includes a large number of compression and distribution stations. Expansion in existing stations and newly built stations in the gas network always need to follow the same standards. CADISON has been adopted by the Open Grid Europe to introduce such standards, it ensures that the existing information is up-to-date and the centrally maintained data is accessible from all other locations.

Open Grid Europe, Essen

As a turnkey supplier of gas turbine power plants, one must operate in a multi-disciplinary environment. In such designs, apart from P&ID and Piping Design, other disciplines like Ventilation, Electrical Equipment, Steel Structures, Building Design, etc. are involved. Engineering data and designation like KKS tagging system and component descriptions is required for order lists. CADISON effectively supports such a multi-disciplinary approach, thus helps improving the quality and significantly reduce the project durations.

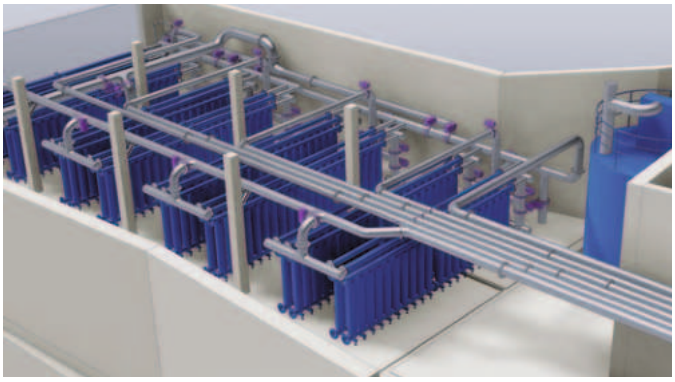
Energetechprom, Ukraine -140MW power station

Water



A global leading provider of Industrial waste water treatment solution adopted CADISON to integrate it's engineering workflow process for a major industrial water treatment Project. It has been leveraging CADISON as integrated solution for over 8 years for their design and construction & currently using CADISON Project Engineer, CADISON 3D Designer, CADISON P&ID Designer and CADISON MATPIPE modules.

H+E GmbH (HAGER + ELSÄSSER)



Modern plant design delivers detailed 3D plant models that are much more realistic and has almost complete resemblance of real plant. Thus, it's possible to present a realistic view of the future plant to the Operator at an early stage.
The water treatment plant shown above is an impressive view of plant section, showing space requirements and accessibility in the plant for future Operation and Maintenance.

3D-Layout TWA Muttenz

Pharma

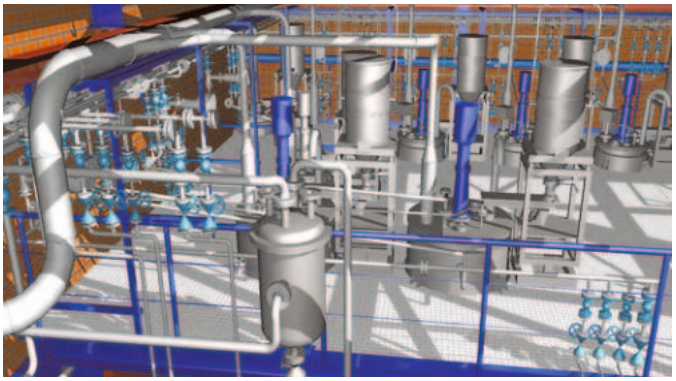
Breweries are particularly suitable for modular design construction and skid, since certain areas need to be re-designed or modernized often. The model shown above was a brewery designed & constructed with DIN 11850 standard. The displayed tanks were developed with the help of integrated 'Tank Assistant' and 'Inventor Interface'. The valves and joists are part of the manufacturer catalogs provided by the customer.

Ziemann International, Ludwigsburg

Large equipment manufacturers such as the GEA Group and Alfa Laval mainly use their own manufacturer catalogs to offer a customized solution to their customers. Here, all disciplines (P&ID creation, Plant layout & piping design and even shipping & logistic) are involved. These companies must always show the object designations provided by the customer. CADISON supports in defining of these standards. Also certain areas of a plant are often very similar or same as other areas, re-usability of data is becoming increasingly important in project implementations.

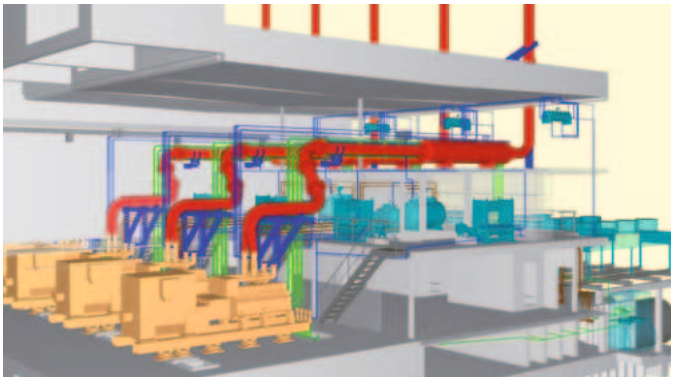
GEA Group | Alfa Laval

Chemical



Engineering companies use all facets of plant design in adoption of different standards in project execution. CADISON helps in preparation of different standards (DIN, ANSI, GOST, etc.), different manufacturers catalogs, pipe specifications, etc. It also supports with automatic design features such as 'Tank and Nozzle Assistant' / 'Pipe Support Modeler', 'Steel Layout Assistant' and interfaces to pipe stress calculation programs such as ROHR2 or CAESAR II and creation of accurate BOM / MTO.

Burkard and Gärtner



CADISON is an integrated engineering tool which helps in bridging the gaps across the engineering processes. Seamless data integration with ROHR2 helps to avoid duplication of data entry. Also because of simple creation of pipelines and isometrics and availability of current & complete part lists / BOM and design revisions, we save significant time and money in our planning process.

AMR GmbH, Essen

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