Issue 2014 | 4

CADISON® WORLD

EXPERIENCES & NEWS

Introducing CADISON® R14

Improved

Usability, Project Engineering Efficiency and Catalog Management

Save the Date: CADISON® Webinar schedule for 2014

Registrations are possible on the website (www.cadison.com) one week before the webinar date. Live webinars will be conducted in German and all webinars recordings will be available online on the website in German and English languages.

Live Webinar Timeslot: 11:00 AM Germany Time / CET

Date	Description
31.3	Easier working with Branch Table
28.4	Faster Catalog creation and modification in MATPIPE
26.5	Faster Data input in CADISON® true List from file
30.6	Save Time on Working with Secondary Support Modeler
28.7	Best Practice in PDF Creation inside CADISON®
25.8	Faster Catalog creation and modification with new Export and Import function in MATPIPE
29.9	Benefits through Dynamic Object model
27.10	From 3D to 2D - Ways to synchronize a 3D Model to a PID
24.11	GA Drawings, Settings DIM, and 2D Extract
12.12	Faster and Accurate Data sheet creation in CADISON®

Save the Date: CADISON® Training schedule in 2014

Training schedule for **CADISON® P&ID Designer** (AutoCAD based) and **CADISON® 3D-Designer** in 2014. These trainings will be Basic Level Trainings in our Training center in Bad Soden, Germany for max 4 users, the Training language is German.

Trainings schedule in 2014		
Month	P&ID-Designer 2 Days	3D-Designer 3 Days
May	05.05 - 06.05	20.05 - 22.05
June	03.06 - 04.06	24.06 - 26.06
July	02.07 - 03.07	22.07 - 24.07
August	05.08 - 06.08	26.08 - 28.08
September	02.09 - 03.09	23.09 - 25.09
October	07.10 - 08.10	21.10 - 23.10
November	04.11 - 05.11	24.11 - 27.11
December	02.12 - 03.12	16.12 - 18.12

CADISON® HelpDesk

In September 2013, we have switched our email-based internal product support database to a full featured online HelpDesk system.

The advantages for you, our valued customers, are

- Increased transparency by always up-to-date overview of the state of all your and your colleagues' tickets
- Enhanced search functionality with template feature to quickly find tickets based on keywords, priority, time restrictions etc.
- Integrated FAQ-Explorer: This helps save time by getting an immediate solution for frequently asked questions
- Quicklink for Online-Support: Our team of experts frequently uses online support tools to bring you a quick and effective help

- You have the flexibility to send us your request by mail or enter it directly in the HelpDesk portal

In both cases, you can insert screenshots and attach files.
You will get a confirmation from the system for each incoming request.

Good service is based on honest feedback...

We are committed to continuously improve our service for you.
This is the reason why, whenever a ticket is closed, the system automatically sends an email to you with the invitation to rate our service on an online-form.
We are tracking your votes on a weekly basis and strive every day to ensure we provide you with the best support.

Follow us on www.cadison.org/helpdesk for online help desk system where users can also find frequently asked question (FAQ) answers to learn from experience of other users.

Welcome...

Ralf Lehmann

"With the release of CADISON® R14, we expect to have many delighted users and customers. The new CADISON® Steel Professional module is another example of Productivity (efficiency) improvement and integration that sets us apart from our competitors."

Welcome to CIC 2014 and thank you for being with us. ITandFactory has been investing more and more Development funds with each release and the result of these efforts is very evident in CADISON® R14. We are pleased to share the improvements in R14 with you and hope you find R14 as exciting as our Team does.

In CADISON® R14, our focus was on improving Usability and Productivity and to improve Catalog Management. We also made further improvements in our Electric-Designer module to make it the best-value offering in the market-place. Our new CADISON® Steel Professional module is another good example of our seamless integration and engineering efficiency improvement philosophy.

I would also like to take this opportunity to thank our Development and Support teams who have worked very hard to deliver so much value to our customers.

Ralf Lehmann
V.P. – DACH Region Sales

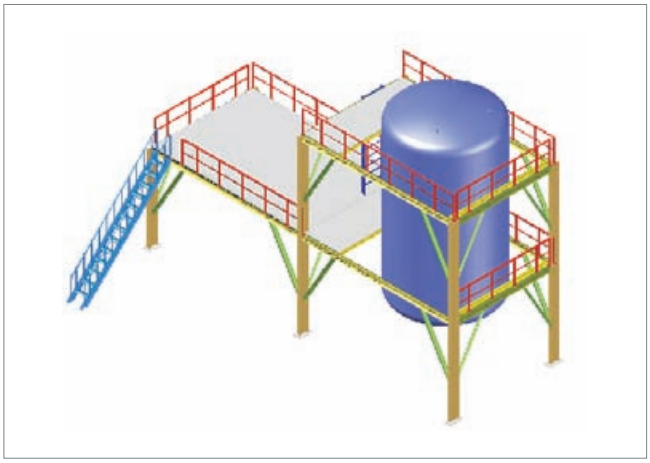
EDITORIAL

PRODUCT

BEST PRACTICE

CUSTOMER SUCCESS STORY

SERVICE



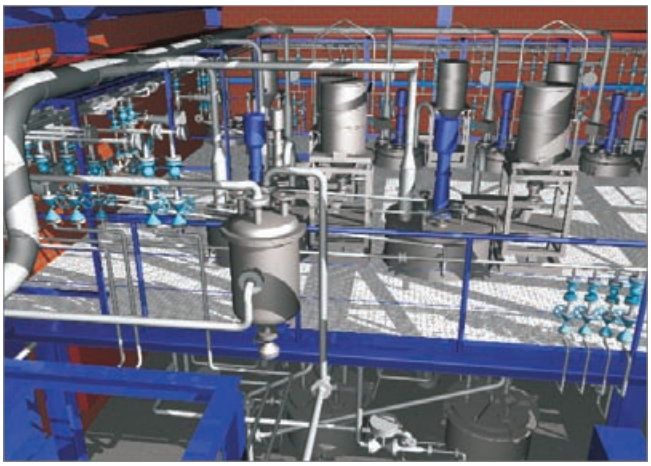


Image Courtesy: Burkard und Gärtner GmbH & Co.KG

Ajit Joshi

New Identity, Renewed Commitment

Dear Customers,

Over the past few years we made significant improvements in CADISON® and we also made some key changes in our organization for enhanced responsiveness and support to you. Biggest testimony of your acknowledgement is clearly evident from an unprecedented rate of upgradation and adoption of our last major release CADISON® R13. It is indeed heartening to note that all the investments and efforts we have put into the product development and support infrastructure are yielding benefits to you.

To symbolize this growth and evolution of CADISON®, our business and revived spirit at ITandFactory, we felt its appropriate to change the CADISON® identity. We sincerely believe that this is a true representation of the new dynamism and growth mindset that we are experiencing and not just a cosmetic change!

I'm also pleased to inform you that our parent company Neilsoft Limited is now 100% owner of ITandFactory and is committed to making further investment toward development and distribution of CADISON®. This is aptly reflected in the boldness and vivacity of our new identity.

The New CADISON® identity personifies the deeper meaning of being a fully integrated multi-disciplinary engineering solution that combines the entire engineering workflow in one system. The vibrant warm colored interlocking forms create a conjoined hexagon, which connotes interdependency, a collaborative and harmonious nature with entire process integration.

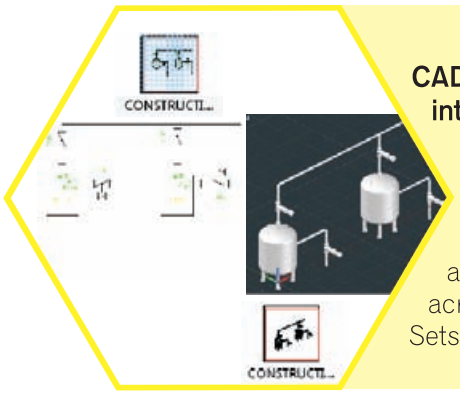
The hexagon is one of the geometric shapes that occurs in nature and is an energetic emblem of unification, dedication and reliability benefitting balance, perfection, standardization and reusability. Each internal form represents a discipline with their own set of areas of expertise or insights. Their synthesis depicts its multi-disciplinary aspect and properties to work together leading towards a cogent Plant Design & Equipment Engineering Solution.

The above description can be best summarized as fully integrated *intelligent Plant Information Model* (iPIM). With its unique design and architecture, CADISON® brings the concept of BIM from Building industry to Plant industry - offering engineering efficiency and cost reduction through the entire lifecycle from Proposal Engineering to Construction, further extending to Maintenance.

As we move forward with a new vigor, we are more than ever committed to bring the best business value to you.

Ajit Joshi
Managing Director – ITandFactory

CADISON® R14: Improved Usability... Some Examples



CADISON® now allows the users to create an 'integrated construction set' which integrates multi- graphics representations:

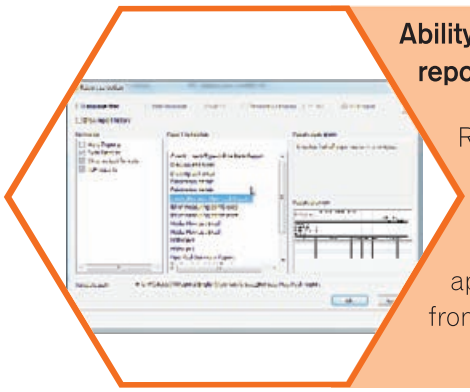
Extensible Construction Sets allow users to create a construction set which contains both 2D and 3D objects. For e.g. a construction set can contain graphic objects for PID, 3D and also for Electrical schematic objects. Same set can be used as assembly in multiple drawings. This saves reconstruction efforts of the Designer across multiple drawings and increase the accuracy of BOM. Extensible Construction Sets can be used across projects to improve reusability.

New Undo functions: Introducing undo feature in CADISON® R14. Now it is possible to use undo feature in Object Editor, Object Inspector, Table and Tree for specific commands and operations. For e.g. When changing property in Object Inspector, it is now possible to undo the operation and while using "Fill and Number" command in table, it is possible to undo the operation as well.

User can now give target coordinates in the Cartesian displacement dialog and there is no need to calculate distance for displacement:

This allows users to use combination of offset value, target coordinates which will ease the selection of target location for frequently used CADISON® construction commands such as Move, Rotate, Copy etc.

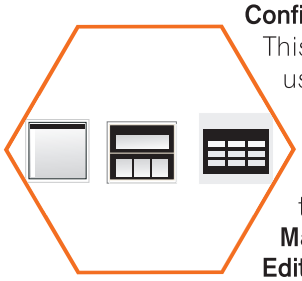
Undo, Redo features in Visio® PID Designer: With R14, Undo / Redo features are made available in Visio PID Designer which are compatible with the CADISON® database Undo / Redo functionality. This enables users to use Undo / Redo commands on database transactions similar to AutoCAD based CADISON® P&ID Designer. The default level of Undo / Redo is limited to 20, however users can increase it up to 100 by tweaking the settings.



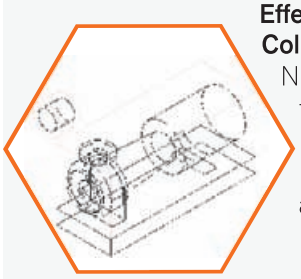
Ability to preview report templates and select the right one before generating the report:

Report Generation is made easy, new report selection user interface allow users to filter report templates based on formats (word, excel, pdf), language. Users can specify main, secondary language, know purpose of report, preview report format before generating the selected report. This will allow the users to select the appropriate report easily and it also assists in selection of required report template from a number of report templates.

Ability to create reports in XML format for data exchange



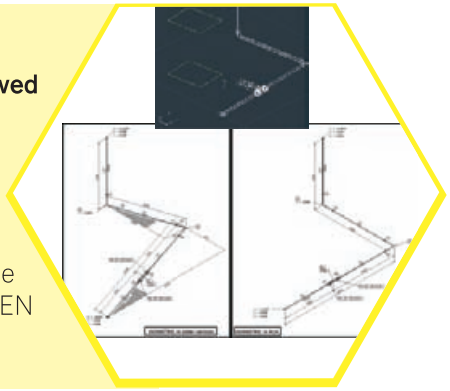
Configuration of Table dialog:
This is another example of improved usability where users can easily switch between the available views in a UI. In this case users can switch between three views with toggle buttons on the top of UI. **Many more improvements such as Edit Objects, Batch Plot Settings, Dock Dlg Pos etc.**



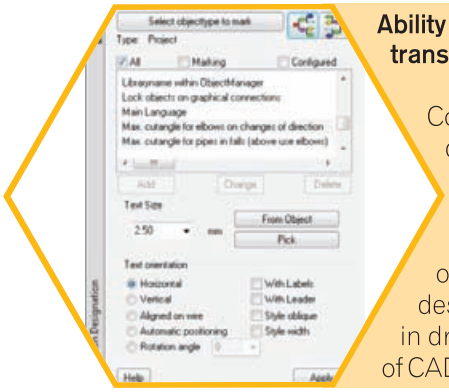
Effective visualization of Insulation and Collision hull:
Now users can define the color and transparency of the Insulation and Collision graphics for better visual in 3D graphical representation of an object.

Ability to take 3D model reference coordinates into ISOGEN isometrics and improved ISOGEN dialog (UI):

There are some situations wherein the X-Axis of pipeline's isometric is not aligned with the X-Axis of world coordinate system. In such a situation, it is required to define origin of ISOGEN along with the orientation so that more clean and readable isometric can be generated. R14 helps in defining origin along with orientation for clutter free isometrics. This along with improved UI improves ease of use of CADISON® ISOGEN Interface.



Ability to attach a document to multiple objects: CADISON® tree provides a drag and drop functionality to attach one object as child to another object. It is also possible to attach multiple objects to a single object. New feature to attach single object to multiple objects enable users to attach a single document such as a certificate to multiple objects.



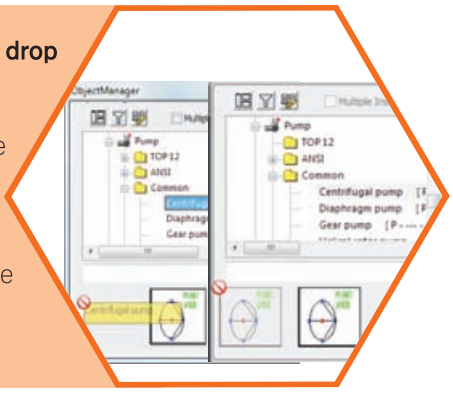
Ability to save designation configurations in CADISON® designation dialog along with translated text for German & English languages:

Common designation dialog is one of the most frequently used dialog in creation of GA drawings to define annotations. This dialog has provisions to configure annotations such that resultant text is combination of object database properties. The configuration can also be saved for future use. This saves a lot of time, improves accuracy and eliminates manual errors. Now users can save the configurations with object properties instead of cryptic internal names. This allows users to select suitable designations easily; it also helps to visualize the resultant text before placing annotations in drawing. These configurations will be translated automatically based on the language of CADISON® installation.

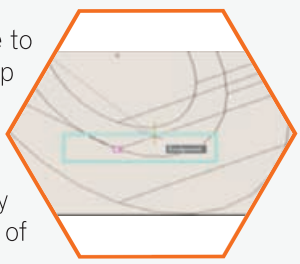
UI Improvements: Suppressing Object Editor when inserting specific objects: This is one of the few examples of improved usability. Most users just close the additional dialog box without modifying the information in a UI for specific task. This function suppresses the Object Editor dialog at the time of creating a new project, or a new drawing so that users can reduce the number of clicks in executing a specific task.

Flexibility to define custom text for Dockable library tree. Additional option to drag and drop graphic symbol into Designer:

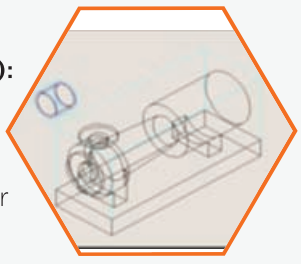
Object Manager used to select objects to place in drawings or CADISON® tree. With the new feature it is now possible to configure the text to display in Object Manager making it more user friendly in selection of objects. In addition it is now possible to drag the preview images of selected object from dockable Object Manager windows into Drawing or CADISON® tree. User can see object description / preview of object to be placed in at the time of drag drop operation making this function more intuitive.



Object snap for Insulation representation: Now it is possible to select insulation graphics to snap with the objects at the time of placement. New features visualize the markers of insulation graphics for easy selection similar to the selection of base bodies.

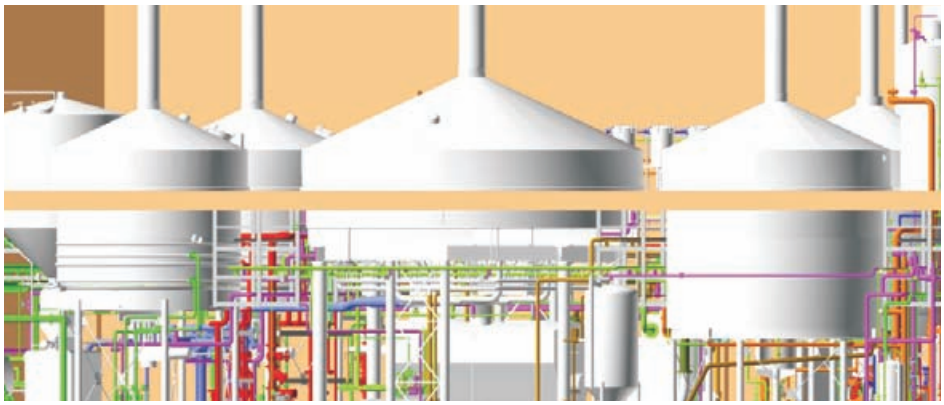


Insulation and Collision hull representation in ACIS output ("2D Extraction" or "DWG neutral export"): Now it is possible to export graphical representation of Insulation and Collision hull into 2D extraction drawings using "2D Extraction" or "DWG neutral export" commands.



Integrated Planning of Brewing Plants in CADISON®

Integrated Planning of Brewing Plants in CADISON® with a modular approach



Michael E. Brückner, Irene Senge

The Ludwigsburg-based Ziemann International GmbH, part of the CIMC Enric Holdings Limited, is a competence center for planning and implementation of turnkey brewery plants or expansions & modernization of existing breweries. Each plant / system from brewhouse to pressure tank cellar is planned individually according to the specific needs and desires of the customer and designed for maximum efficiency.

Tag numbers are used in a process plant to identify components such as valves, pipes and containers uniquely. Approximately 1000 tag numbers are required even in a medium-sized brewhouse for brewery equipment and measuring points identification. Ziemann uses a hierarchical and modular tagging system that is managed in an Access database.

Therefore an engineering software supporting both hierarchical and modular structures was required. A quick evaluation demonstrated immediately that the hierarchical CADISON® database can map the number system effortlessly.

Modular Way of Working

Within a brewing line if several systems use the same or similar functions, in order to exploit them fully, a structured database-oriented approach is essential. The standard P&ID (Piping and Instrumentation Diagram) for a hops dosing system for example contains three hops tanks. All equipment on this drawing belong to Area 2 (Brewhouse), the brewing line 1 and the subarea 32 (process stage hops dosing). In the CADISON® structure, the third hops tank is a subordinate of the logical plant 32_03, which in turn is part of the parent logical plant 21, and thus given the name 21_32_03BB01.

If the brewery needs a fourth tank, they can make a copy of the corresponding logical plant 32_03 and the graphic with the associated piping, valves and measuring points. Just by doing this, the counter of the logical plant changes from 3 to 4 and the tag numbers of all child objects change accordingly automatically. Objects are assigned to a logical plant, and also to a logical hierarchy of media, pipelines and pipe classes. When you copy for e.g. a dosing concentrate system as described before, you are also able to copy the major pipelines, pipe classes and media. These major objects are changed to new media and pipelines by editing the relevant attributes, to which all the copied equipments are attached as per the hierarchy.

Offers for supply of a brewing line are developed from numerous standard P&IDs and assemblies exactly as per the customer's requirements. Due to the seamlessly integrated modular concept, the 3D pipeline drawings and the customer-specific P&IDs are organized as per design process stages. Each P&ID represents a process view of the brewing control system.

CADISON®- Workflow

With the implementation of CADISON®, a proposed project can now be developed in an integrated manner compared to earlier when sales and engineering used their own templates.

- **Project planning & budgeting:** Create a custom project offer from standard P&ID templates; Export data from the CADISON® Project-Engineer into an Excel-based calculation tool.
- **Engineering P&ID development:** Continuing the offer project created; technical details; export of equipments / valves / measuring points into an Excel list as a central document for the technical processing; the standard object descriptions are converted into specific manufacturer descriptions according to customer requirements here.
- **Engineering 3D piping planning:** Import of 3D models of buildings, tanks (from Inventor); steel construction of the main pipeline routes in the layout design; creating the 3D pipe drawings for each process section and the main pipeline routes with many 3D layouts; drawing export to Navisworks for visualization and coordination with the customer; export of the piping material into Excel; order lists using

with a modular approach

summarizing tool; Excel list for each pipeline with all piping components.

- **Assembly department:**
  Take over of P&IDs, piping plans (3D layouts as A0 plots and PDF files), Navisworks model, pipeline lists for assembly. (3D layouts as A0 plots and PDF files), Navisworks model, pipeline lists for assembly.

The benefits of integration are numerous:

- Sales uses standard P&IDs for offers that are created and maintained by the engineering department. This allows savings in engineering and drafting hours.
- In case of an order, the engineering department receives a project with customer specific selection of the P&IDs based on the latest offer including standard tag numbers and space for detailing. This allows to minimize un-interesting and monotonous work.
- The assembly department and the brewery customers understand & manage themselves thanks to the modular structures in both the P&IDs as well as the Navisworks model.

Modernization of Egger Brewery

We find the first mention of the private brewery Egger in Austria in 1675 and since then it has been successful in the market. With an annual output of 650,000 hl, the existing facilities reached the capacity limit in 2009. Therefore, the construction of a new ultra-modern five-vessel brewhouse, designed to twelve brews per day, and the renovation & expansion of the cold block was planned. The first fermentation was in end of November 2009 and the storage area was expanded to eight additional cylindroconical tanks. As a result, an annual discharge amount of 850,000 hl was possible. Already in mid-December, the new brewhouse was completed.

The main equipment - consisting of a wet mill, two mash tun kettles, a lauter tun, wort kettle with an internal boiler, as well as a vacuum evaporation system - were perfectly on schedule in the new building and installed. The commissioning took place on 28.04.2010 without a hitch, two days before the originally specified date, and the new system was able to run from the first brew and then replace the old brewhouse immediately.

Outlook for Plant Operators

The CADISON® databases contain valuable inventory data needed for maintenance purposes or expansion needs that should be made available to plant operators. One possibility is using the Navisworks model to view the drawings and pipeline structures as well as selected information for individual objects like for e.g., a 2-way valve.

In all breweries planned with a tagging system, each tag number has a specific meaning and a corresponding functional text that is used for process description and programming of the brewing control system. International brewing enterprises can leverage the CADISON® P&ID databases based on logical systems & object classes. For e.g. for maintenance and centralized procurement activities for interesting comparisons across different breweries or other brewing lines within a brewery.

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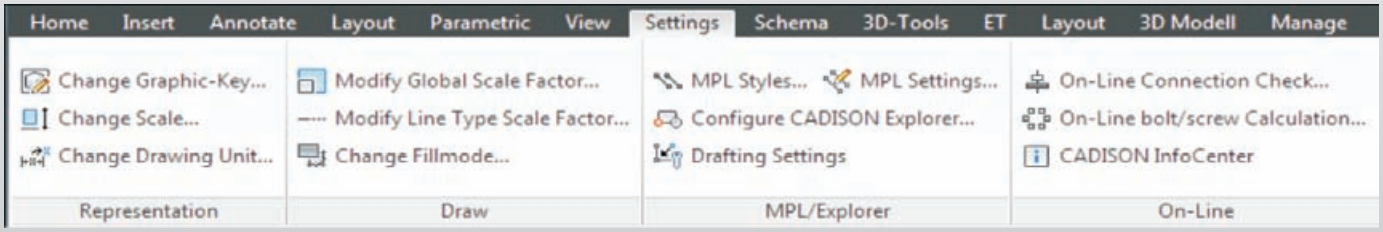
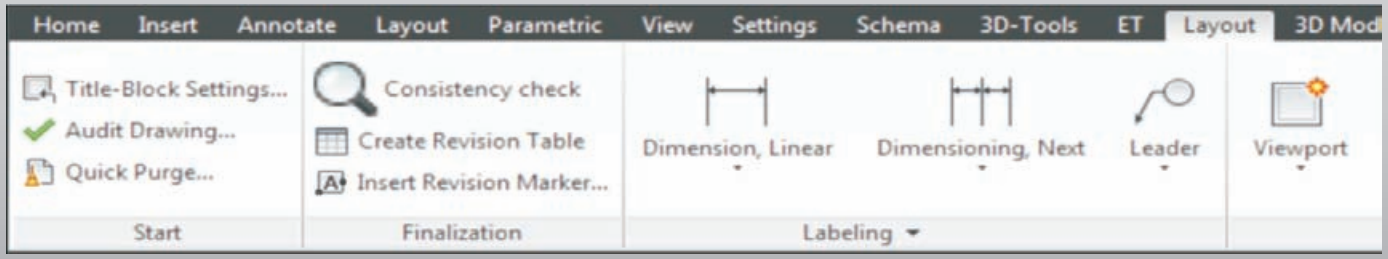
Author: *Michael E Brückner, Technical Director Process, ITandFactory GmbH, Bad Soden; Dr.-Ing. Irene Senge, Engineering Process Technology, Ziemann International GmbH, Ludwigsburg*

Regrouping commands for improved usability in R14

CADISON Common



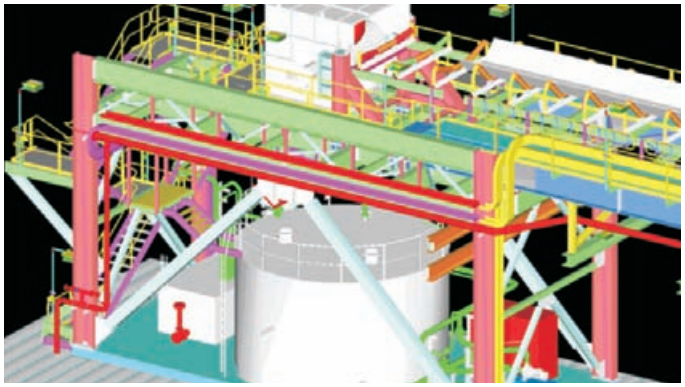
2D Layout



New “CADISON® Steel Professional” Module

New Steel Module integrates 3D modeling and 2D layout capability in CADISON®

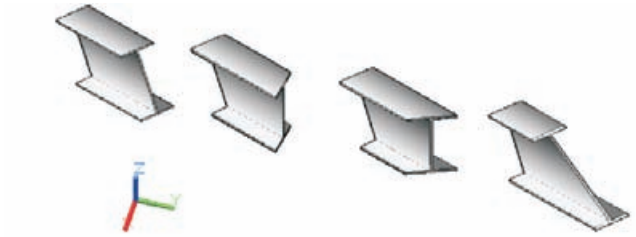
CADISON® Steel Professional provides Wizards to efficiently create steel structures required in plant design and easily visualize the plant layout.
The module also provides users the ability to extract GA drawings of the structures created and generate reports for Bill of Material and Quantities required.



In addition, the module allows users to create custom assemblies like ladder cages, towers, pipe supports, frames, gratings, roofs, etc. and edit / modify these assemblies.
Users of CADISON® Steel Professional will benefit from the significant time-savings in creation & modification and visualization of steel structures.

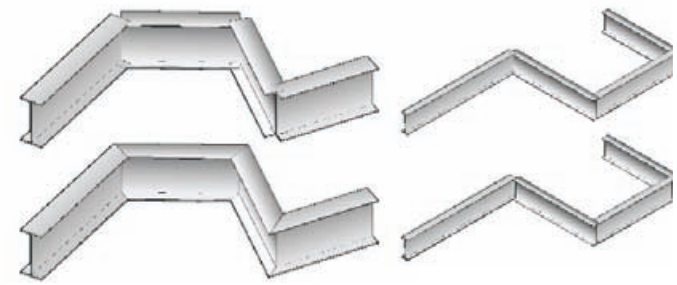
Easy Placement of Steel Beams

Structural Engineers spend considerable time in placing the steel beams, piece by piece; hence the placement of steel beam has been greatly improved with quick and easy selection of different steel sections, simple selection of cardinal point and effortless placement of end-cuts. The end-cuts can be applied along XY, XZ and YZ planes as the beams are being placed, thereby reducing the time required to apply the end-cuts once the beams are placed.
These are further supplemented with MATPIPE catalogs for Indian (IS), British (BS), European (Euro) and Russian standards as part of standard installation.
Additionally, Object Model for Steel Beam is updated to include properties specific to SDNF (Steel Detailing Neutral Format), thus enabling possibilities of SDNF Export and Import in later releases of CADISON® Steel Professional.



Beam Mitre and Offset for Joints

Once users have placed the beams, creating mitre-joints and setting end-offsets for the connected beams is a matter of few clicks, helping in reducing clashes and updating beam Object Model with precise values.

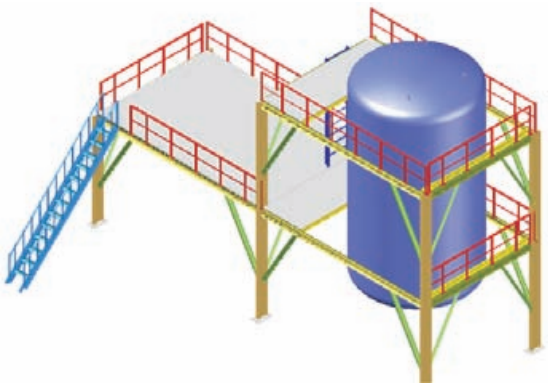


Steel Structure Object

CADISON® Steel Professional introduces a new object called `Steel Structure', this object helps users to build custom assembly of steel objects to form a group. It helps in quickly identifying and categorizing the steel elements at Plant level such as platforms, gratings, frames, roofs, towers etc. Users can easily create new Steel Structure objects to include the existing steel objects.
These objects help in preparing specific BOMs and cost calculations. Following is the available list of features related to Steel Structure object:

- Create New Steel Structure
- Add to Steel Structure
- Exclude from Steel Structure
- Delete from Steel Structure
- Delete Steel Structure

Platforms

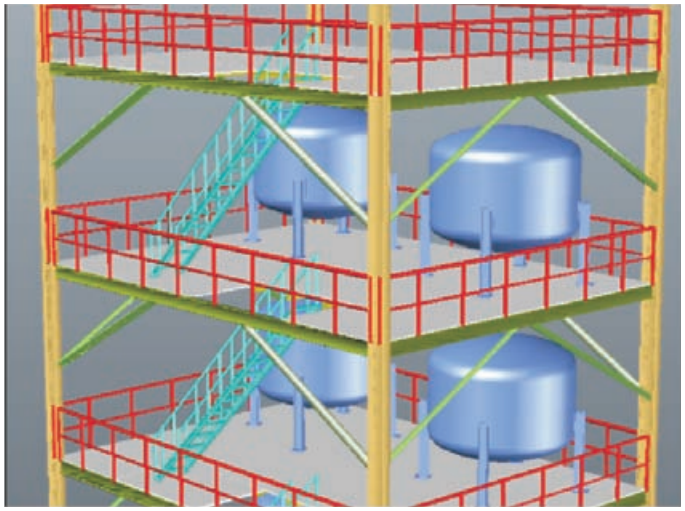


Enhancing Productivity and Usability

CADISON® Steel Professional allows users to quickly create rectangular, polygonal (circular) and freeform platforms using user-defined steel sections for Columns, Primary & Secondary beams, Braces and types for base plate & flooring thus enabling efficient visualization of the structures and delivering initial BOM for proposal preparations and cost calculations.

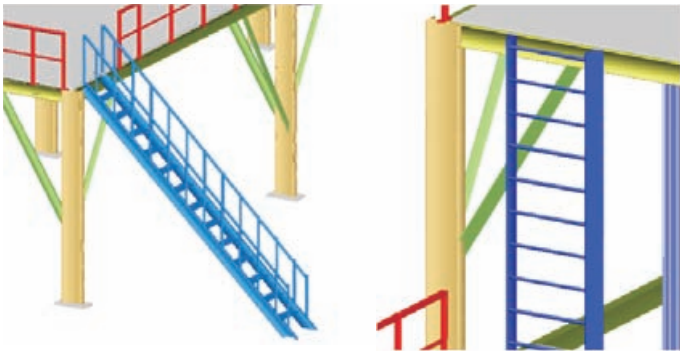
Handrails

Users can quickly create and place continuous or split handrails along the selected path using user-defined steel sections.



Staircases & Ladders

Wizards for Ladder and Staircase, help to quickly generate these structures using user defined profiles. These structures are created as Steel Structure assemblies enabling copying of these to different locations.



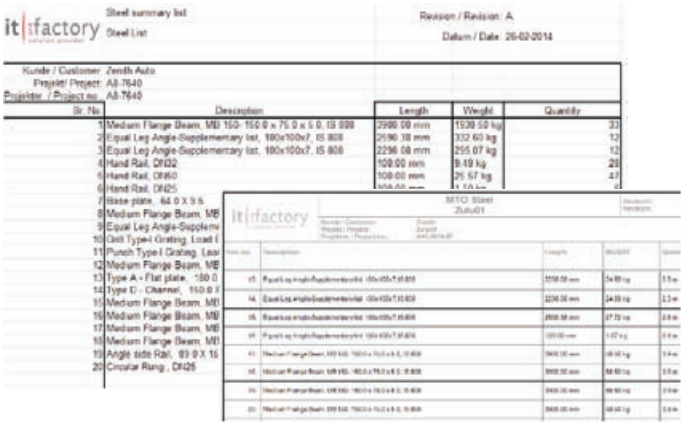
Water Tanks

The wizard supports creation of rectangular water tanks using steel plates, steel sections and foundation frames.

BOM generated for such heavy structures gives useful information for initial weight, price calculations and helps in checking clashes during different phases of the project.

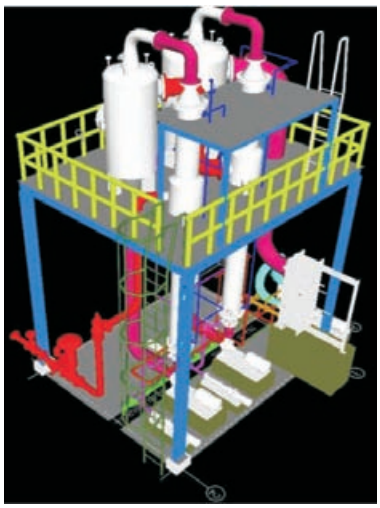
Reports

CADISON® Steel Professional comes with two report templates to provide BOM immediately upon installation. These reports give piecewise information of its type, size and weight or provide categorized report of the steel sections for the type, length, weight and quantity.



Salient Features

- Improved Beam Placement
- New MATPIPE Catalogs
  - British Standards
  - Indian Standards
  - European Standards
  - Russian Standards
  - Chequered Plate and Grating
- Custom Assemblies – Create / Modify
- Create Plate / Flooring
- Reports – BOM



Plant Design & Equipment Engineering Solution

CADISON® 3D-Designer: Installation and pipeline planning in the 3D model are in the competence of the 3D-Designer. Normally this module is used for access to data from Basic Engineering or P&ID. Efficient assistants are available for installation planning: For instance, isometrics can be automatically generated from the planned pipeline systems.

CADISON® P&ID-Designer: The CADISON® P&ID-Designer plays a decisive role in design, construction, commissioning and maintenance and has an enormous effect on the complete lifecycle of a plant. In this case the preliminary project engineering will be integrated with Basic and Detail Engineering and 2D layout planning.

CADISON® Electric-Designer: The module for creation of intelligent electrical schematics (such as single line diagrams, circuit diagrams, terminal drawings, loop wiring diagrams), panel layouts, 3D cable tray and bus duct routing. CADISON® tree structure enables creation of detailed work breakdown structure (WBS) in non graphical environment to use the Electric-Designer from bidding stage onwards. Drag and drop, synchronization features guide the designer in developing schematic, 3D drawings from WBS to drawing generation and reports creation. A common database to access data of all disciplines of a project allows user to combine workflow of electrical engineering with process engineering.

CADISON® MATPIPE: Independent module for development and management of pipe classes, creation of parameterized 3D components, preparation and integration of manufacturer catalogues, import and export of data plus examination of existing catalog data to ensure that the data is up-to-date.

CADISON® Project-Engineer: The basic tool for Process Engineer and Project Manager. User may create plant work breakdown structure and calculate cost in non-graphical environment such that the detailing is possible in stages without data redundancy. This is what we call “Conceptual Engineering”. It allows to create and control project data, users, document management, workflow management and can handle total project change management without CAD interface.

CADISON® Pipe Support Modeler: Pipe Support Modeler assists users in creating and updating secondary supports in an easy and intelligent way. ‘Create and Edit’ wizards for secondary support speed-up the entire process of modeling pipe supports, generation of reports for material take-off and generation of production drawings. It has provision for ten types of predefined supports with additional flexibility to create multiple combination of profiles, orientations, offset etc.

CADISON® Steel Professional: A wizard driven module to quickly create steel structures required in plant design and easily visualize the plant layout. Users can also create custom assemblies like ladder cages, towers, pipe supports, frames, gratings, roofs, etc. and edit / modify these assemblies. The module also provides users the ability to extract GA drawings of the structures created and generate reports for Bill of Material and Quantities required.

Visio® PID Designer: This process engineering solution is very useful for conceptual design and proposal generation. It’s a tool for process engineers and business development professionals who are interested in lightweight CAD systems.

CADISON® Project-Navigator: The Project-Navigator is a pure “Viewing Tool” for your access to all engineering data of your projects. It has the same user-interface like the Project-Engineer and is an indispensable tool for operation and maintenance of your plant.

CADISON® Archiver: The CADISON® Archiver allows you to swap and archive the complete project from the CADISON® productive environment. Archived projects can be rapidly and easily viewed with CADISON® Archiver-Browser without the need to retrieve them from the productive environment. Data and documents of completed projects can be accessed directly. Archiver enables the user to refer / utilize knowledge of archived projects in active projects.

CADISON® Engineer2Web: E2W is a web-based solution which enables users to gain access to CADISON® data over the Internet. Plant data generated using CADISON® Project-Engineer, P&ID-Designer, 3D-Designer etc can be visualized, new objects can be inserted & updated over a standard web browser, and documents of all types can be generated & viewed and added to a document group. E2W can be configured in a manner that the user can access it via Intranet or Internet depending on the requirement of an organization.

CADISON® ERP-Interface: The bidirectional CADISON® ERP-Interface combines the ERP and engineering workflow for creation of a highly integrated system. For instance, orders can be directly released and controlled from the engineering workflow. During plant operation, the technical specifications can be adjusted and the maintenance processes can be initiated. Company-specific standards can be presented individually.

CADISON® Inventor Interface: Inventor Interface enables users to import an Inventor Part or Assembly into CADISON® environment as CADISON® object. Add on menu in inventor will assist user in exporting Inventor Part or Assembly file into SAT and XML format. There is a provision to define connection point to planar face of any shape in Inventor as well as in CADISON® import wizard. User can Import object with or without connection points. Update feature enables the user to revise the exported component as per revised Inventor Part / Assembly.

CADISON® MS Project Manager Interface: Project Manager Interface is a bidirectional tool to plan and track the project status in CADISON® as well as in Microsoft Project 2007 or 2010. This enables project managers to synchronize the project plan between CADISON® and MS Project. This empowers the team to plan and track the project, update project status in design environment. New tool named ‘Task Viewer’ updates the status of tasks assigned to a user in CADISON® environment without use of standard tools like MS Project.

CADISON® ROHR2-Interface: The ROHR2-Interface of CADISON® makes it possible to transmit all pipeline systems created with CADISON® 3D-Designer to the Pipe Stress Analysis software. All required information will be completely transmitted to ROHR2 in the form of NTR files for analysis. Weak points are recognized and can be iteratively eliminated.

CADISON® CAESAR II Interface: CAESAR II interface adds the ability to export pipeline or selected pipes data to neutral ASCII-format .cii file from CADISON® 3D-Designer to be imported into CAESAR II interface. CADISON® object model “ITF-CWIN” contains the essential CAESAR II properties required to ensure accurate data transfer between systems and allows the user to customize to the needs of the project.

Navisworks: Navisworks from Autodesk can be used for visualization and clash detection by exporting the project model (along with attribute data) from CADISON® to Navisworks.

CADISON® Application Programming Interface (API): The CADISON® API allows you to optionally integrate your CADISON® engineering workflow in your business workflow. CADISON® API offers you a high rate of flexibility – not only for external access to data, contents, structures and points of view of CADISON® but you can use it even for dynamic data exchange. New objects can be generated and existing objects can be modified or even deleted. Thus, you have a new level of openness and accessibility of database. CADISON® API can be used by all customers as free-of-charge supplementary module.

“CADISON® Pipe Support Modeler”

Pipe Support Modeler for easy to create Secondary Supports

In addition to the prefabricated pipe support assemblies that can be purchased directly, there are also supports that must be individually fabricated and mostly done locally.

A pipe support concept can be established at the beginning during the project planning wherein the different types of supports are defined.

For production, fabrication & installation, you need the pipe supports along with the Hookup drawings.

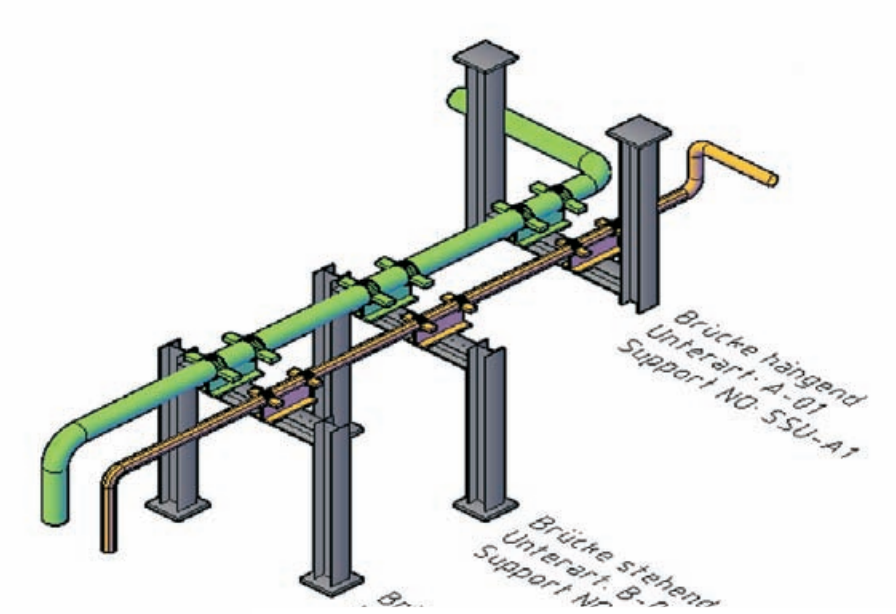
CADISON® currently has 10 different types of secondary pipe supports

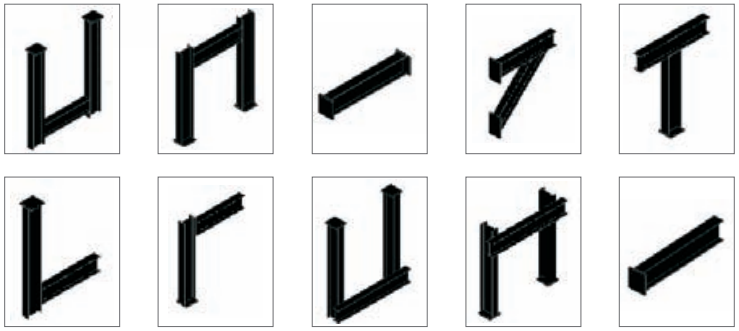
- Goal Post
- Inverted Goal Post
- Cantilever
- Braced Cantilever
- T Post
- L Post
- Inverted L Post
- Extended Goal Post
- Extended Inverted Goal Post
- Fixed Beam

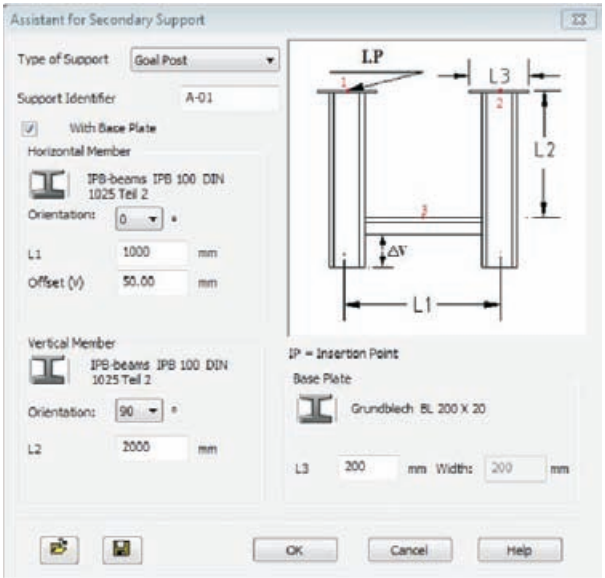
The secondary support modeler is available in CADISON® 3D-Designer as an additional module. The creation of secondary supports is facilitated by a wizard-driven approach.

After selecting the type of support, the different steel types (ANSI, DIN, IS, etc.) can be selected from the respective MATPIPE catalogs.

The secondary supports can be created, edited and saved using the wizard. Each support type can be assigned an identification number (Support Identifier), and the associated pipe support / pipeline can be assigned so that the identification number is also shown in isometric drawings.

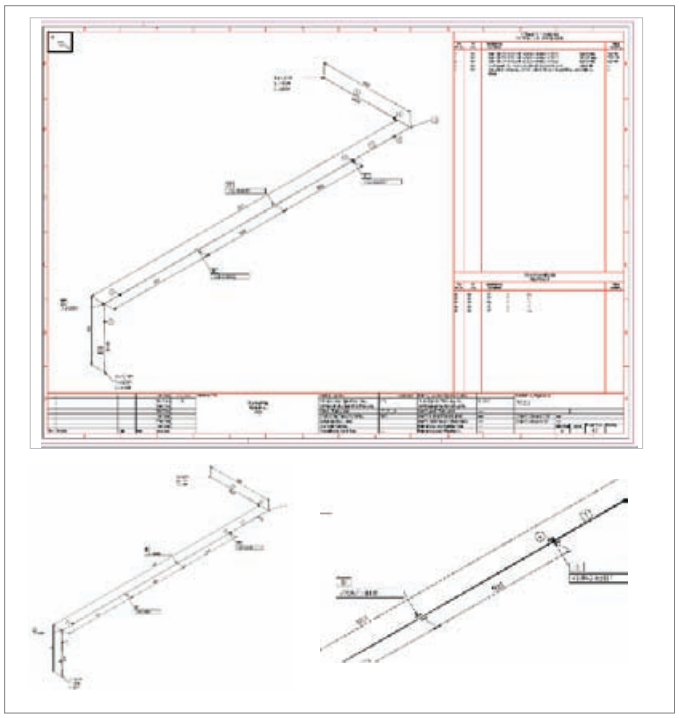






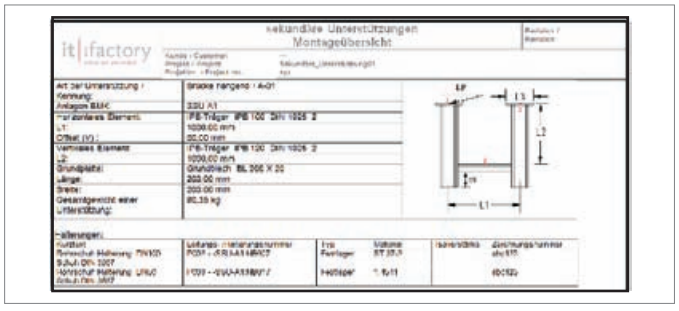
Wizards to Improve Productivity

The secondary pipe supports inserted on a primary pipe support in CADISON® 3D-Designer will automatically come in the automatically generated isometric drawings, as shown in example below.



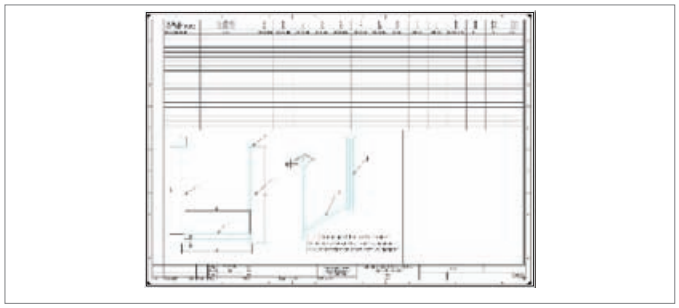
The output can be in different report forms such as:

- Word format reports



- Automatically generated Hookup Drawing (* dwg.)

Different standard reports and AutoCAD Hookup drawing templates are available in the module, which can also be customized by the users as per their own needs.



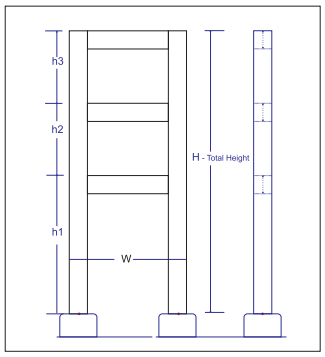
Using the Pipe Support Modeler, users can save significant amount of engineering hours and improve the quality of pipe support related documentation.

Pipe Rack - A Configurable Catalog Object

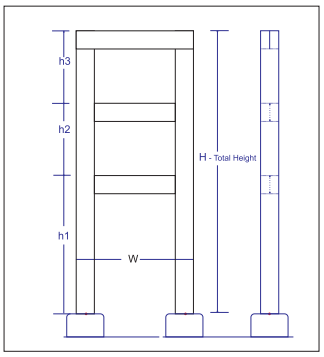
Pipe Racks are structures designed and built to support multiple pipes and they are necessary for arranging the process and service pipelines throughout the plant for e.g. where a large number of process pipelines, flare lines and manifold lines runs through these racks from equipment to equipment or from unit to unit.

Two types of pipe racks named **“Continues columns”, “Extended top beam with continues column”** are added as configurable catalogs in MATPIPE along with the new object model and report templates to generate BOM.

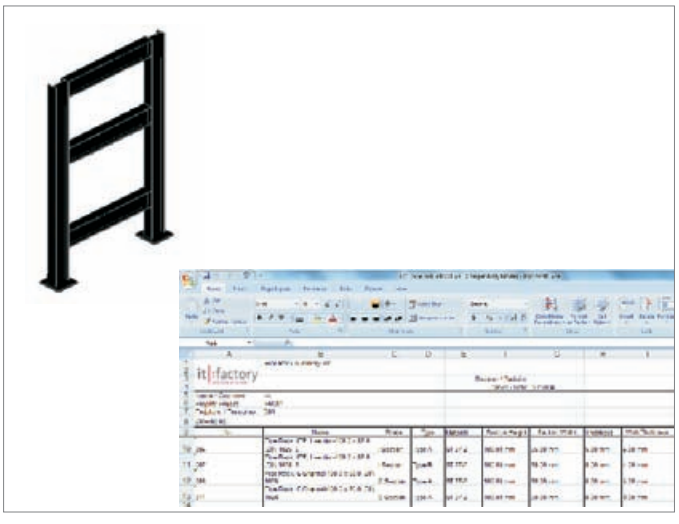
Type A (CONTINUES COLUMNS)



Type B (EXTENDED TOP BEAM WITH CONTINUES COLUMN)



Users can invoke pipe support command from 3D-Designer to select the article from catalog to place in drawing. Users can also modify the dimensions in 3D-Designer to resize the pipe rack as needed.



For more information, contact your sales representative at ITandFactory and we will be happy to organize for a webinar.

Project Cost Estimation... Part 2.2 and Part 2.3

Part 1: Basic Principles (Covered in previous issue)
Part 2: Calculation with spreadsheets Part 2.1 (Covered in previous issue)
Calculation with spreadsheets Part 2.2
Calculation with spreadsheets Part 2.3

Part 1: Enquiry, Bid Report (will be covered in the following issue)

The Best Practice workshop series **"Quotation Costing"** with offer preparation will show how you can achieve this with CADISON®. In this workshop we would like to show how to perform project calculations for your offer in the CADISON® Calculation Sheet.
In the earlier articles (covered in previous issues) we provided an overview of the costing sheet. In this article, we will introduce to you 2 possible approaches.

Prerequisite:

- CADISON® Project Engineer
- Commercial Extension (VCS CEXT – available in the standard installation) – Simplified project calculation for an offer with price control after the order
- Commercial Extension (ITF CEXT – separate module available on request) – Project calculation with calculation factors for an offer with scrutiny after ordering

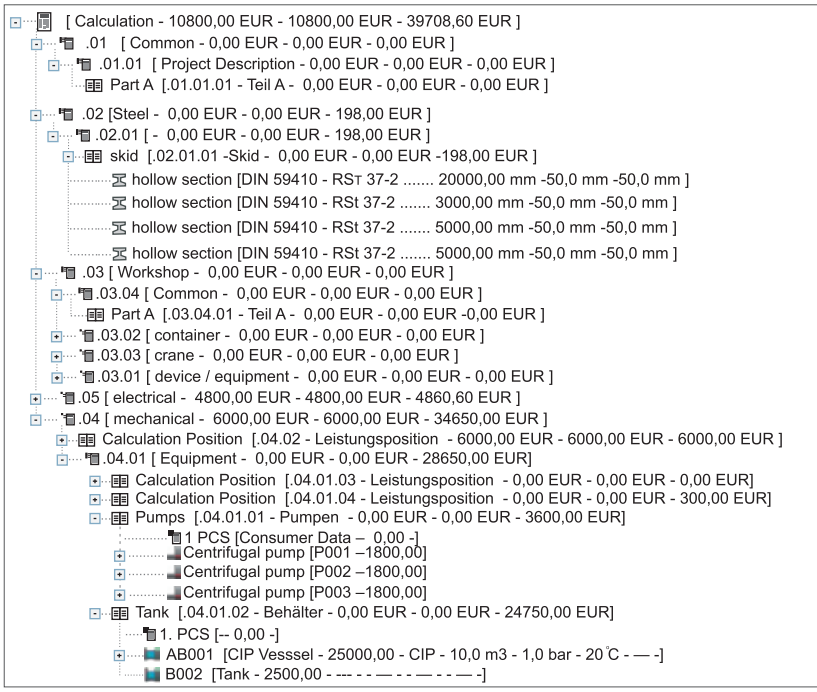
Calculating with the **"CADISON® calculation sheet"** is broken down into 2 sections here, Part 2.2 explains approach 1 with price control after the order and in Part 2.3 we show approach 2 where the project calculation can be performed with calculation factors. In both approaches (structural and object) simple examples are shown in the article.

Part 2.2 Simplified project calculation

In the illustrated dialogues (Object Inspector, Table View, and in the tree), the settings are configured so that only the necessary calculation views and properties are displayed. These can be individually designed and saved in a configuration.

Firstly, the costing structure is built-up - it can be created manually using the Object Manager or copied from a project template. The quotation chapter and the quotation position are the basis of the structure in the later offer which is printed as a Word document.

In this Example you see:
- General information
- Steel Construction
- Site Equipment
- Electrical components
  - Consumer
  - Cable
  - Cabinet
- Mechanical Components
  - Pump
  - Vessel



You can build-up your offer structure with the quotation chapter and quotation position as you do it today with Excel, only more elegant, more flexible and transparent. In the quotation chapter and quotation position, prices are summed up so that you always have an overview of the costs if you have entered the prices.

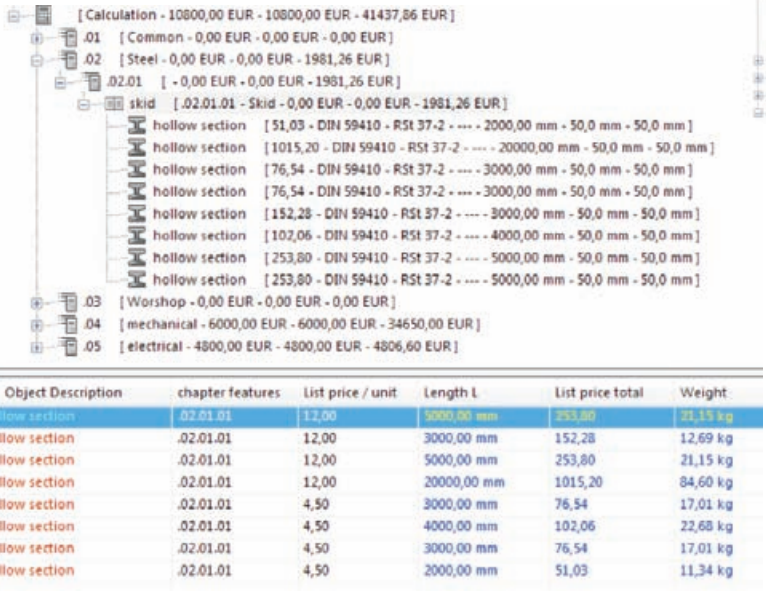
Data changes on tree level:

After you have created the calculation structure, you assign the objects to the respective structure that you can make by drag and drop functionality – open two windows and select the linked object and assign it to the desired structure.

(OR / AND) Data entry at the table level (e.g., steel)

Use the table function in which the selected objects can be

comfortably filtered in the table and then assign each quotation chapter with quotation position. In the adjoining e.g. the table and the tree was further modified in order to find the necessary information more quickly. This also demonstrates the high flexibility of CADISON® to retrieve desired information in different ways. The settings can be saved so that they are also available in the next project.



Object Description	chapter features	List price / unit	Length L	List price total	Weight
hollow section	.02.01.01	12,00	5000,00 mm	253,80	21,15 kg
hollow section	.02.01.01	12,00	3000,00 mm	152,28	12,69 kg
hollow section	.02.01.01	12,00	5000,00 mm	253,80	21,15 kg
hollow section	.02.01.01	12,00	20000,00 mm	1015,20	84,60 kg
hollow section	.02.01.01	4,50	3000,00 mm	76,54	17,01 kg
hollow section	.02.01.01	4,50	4000,00 mm	102,06	22,68 kg
hollow section	.02.01.01	4,50	3000,00 mm	76,54	17,01 kg
hollow section	.02.01.01	4,50	2000,00 mm	51,03	11,34 kg

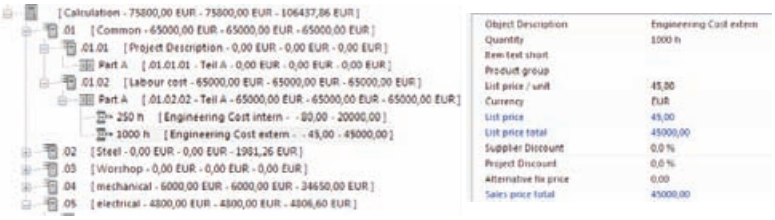
Data entry at the object level (e.g., Pump);

The selected Example shows the different properties that can be adjusted in the Object Inspector (red = catalog, black = editable, blue = calculated). Assuming that the Engineer writes the price in the purchase order into the field "List Price / Unit", the prices will change in the corresponding Quotation chapter and Quotation position.
Info: By pressing F5, you can update the Tree.

Chapter features	04.01.01
Object Description	Centrifugal pump
Manufacturer	KSB
Basetype/Series	Etanorm
Type	65-40/1450
Code character	P
Counting number	001
Media	CIP
Flowrate	3,0 m3/h
Pressure Design	...
Nominal power	1.50 kW
Relevancy for costing	Transmit to Costing program
Relevancy for quotation	Transmit to quotation
Quantity	1 PCS
Currency	EUR
List price / unit	1800,00
List price total	1800,00

Additional costs such as engineering costs (internal or external) or start-up costs can be included in the project calculation and can be disclosed separately.

In the example below, the costs have been included. On the calculation object, you see in the 1st line the result - 1st item is the labor costs and the 3rd item is the total cost of the project at this time.

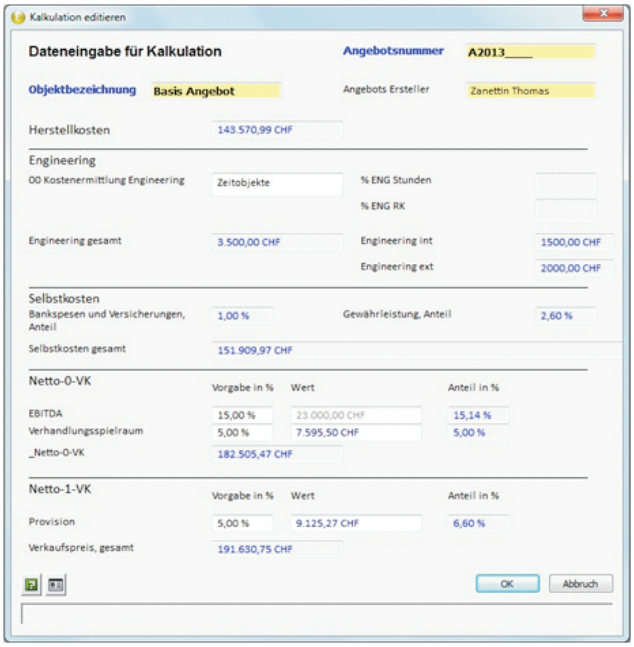


Part 2.3 Project calculation with calculation factors

With this type of calculation, almost all required facets of the project / offer calculations can be covered.
The big difference to the previous calculation method is a different object model - you now have more options in the calculation (e.g., factors for commission, fees, warranty as well as EBITDA amount), as well as in illustration & data input (dialog boxes). From CADISON® R13 onwards, the data can be entered using the configurable dialog. The yellow highlighted fields are executed as mandatory. The user is guided through the various dialogs for performing the calculation.

Depending on whether an object will be calculated and should be displayed in the offer, CADISON® supports the user by different settings, such as:

- Transmit to calculation program
- Transmit to quotation



... Continued on page 19

CADISON® R14 MATPIPE Updates

Easier way to create working and project catalogs with new MATPIPE Wizards

New templates for catalogs are now available in MATPIPE, which can be grouped as follows:

Default / Template Catalogs
Working / Project Catalogs
Standards / Master Catalogs

Definition

"Working Catalog" shown in the "BELOW" representation has been implemented in CADISON® R14. The **"Approved Catalog"** function shall be implemented in CADISON® R15.

Definitions

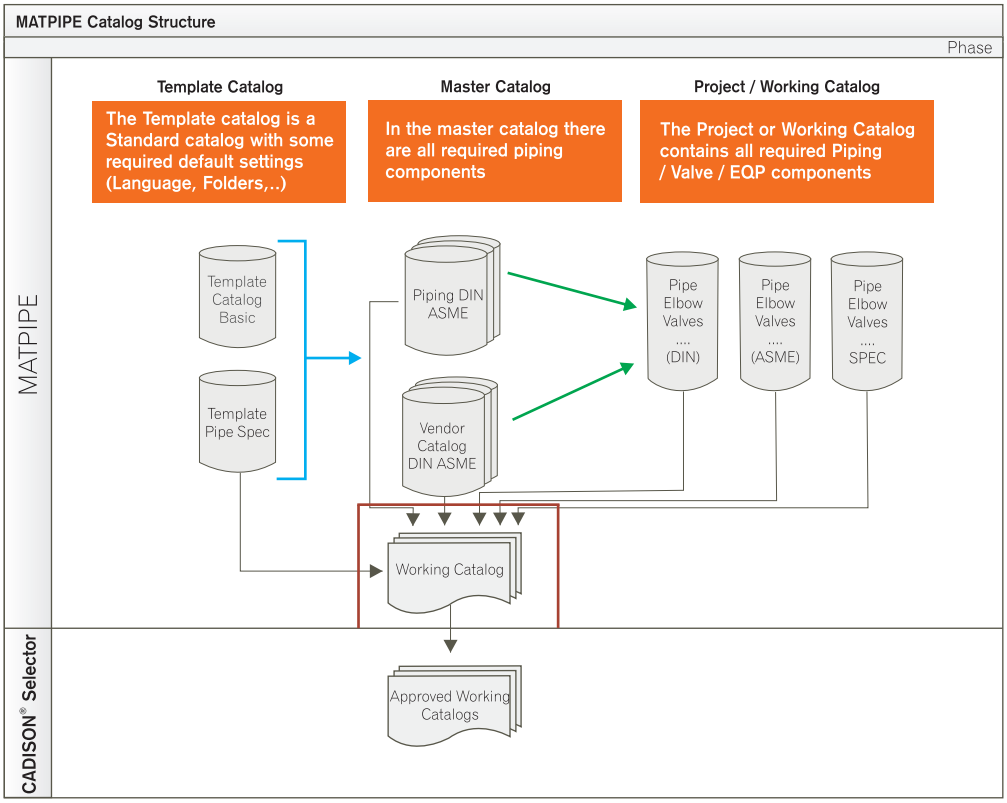
With the included **default templates**, you get some ready-made templates containing defined basic structure.

The **Master Catalogs** are basic catalogs (such as standards (DIN, ANSI, IS, GOST, etc.), flange catalogs, pipe fittings, valves, equipments, steel, etc...) from which users can create Project / Working catalogs or pipe classes.

Project / Pipe Specification Catalogs can be created from a Master Catalog and can be converted to a Working Catalog which is read-only for users.

This feature enables you to distribute catalogs to different locations for using in projects and easier maintenance of catalogs.

With these features, you can now easily create a working catalog which can not be changed by users. You can create a working catalog and update it again when it changes with a few clicks.



MATPIPE Catalog Structure

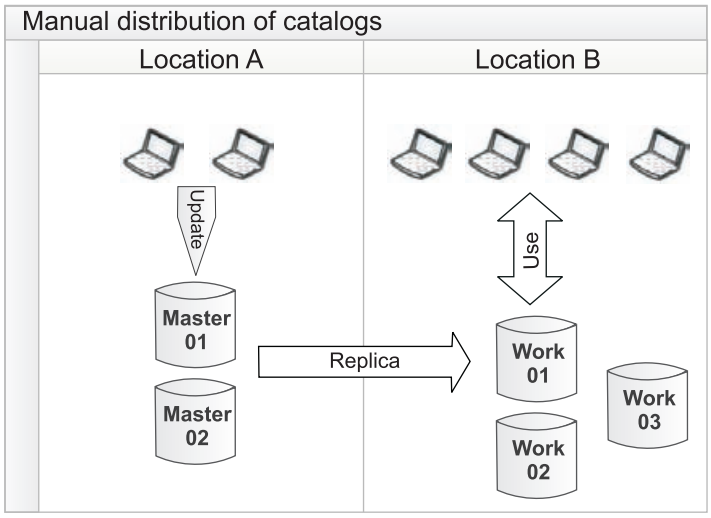
This is especially helpful in multi-site work environment. The illustration at the side provides an overview of the operation.

"Extended Replica" - More flexibility in replicated catalogs

With the new function "Extended Replica", you can add additional properties in the replicated catalogs. So it is now possible in a replicated catalog to have only basic data and in the project catalogs to add project-specific data, for example,

Manufacturer
List Price
Material

With the enhancements in MATPIPE, organizations can have more flexibility in managing / maintaining catalogs and can minimize the number of different catalogs across the organization.



Property	Value
Basetype /Series	59
Manufacturer	ARI
Standrad	DIN EN 558-1
Standard Code	EN 558-1
Supplier	---
Type	52

Project Cost Estimation... Part 2.3

... Continued from page 17

Working with different types of cost

With this calculation scheme, the adjoining types of costs can be calculated and displayed on the level of calculation.

405-Kalkulation, Allgemein
411-Herstellkosten
412-Engineering
413-Selbstkosten
414-Netto-0 VK
415-Netto-1 VK
416-DB Berechnung
420-Umrechnungsfaktor Verkauf
421-Umrechnungsfaktor Einkauf

The **Manufacturers Cost [Herstellerkosten]** is displayed in the calculation itself as a calculated field and is entered in the calculation chapters or quotation position.

When calculating the **Engineering Costs [Engineering Kosten]**, there are 4 different variants available:
- cost determination over time object
- cost determination over quotation position
- cost determination on percentage of sales / order value
- cost determination over time objects with additional costs as a %

In the calculation, you will see the **cost price [Selbstkosten]** which includes the add-on costs
- Material Costing
- Project miscellaneous costs (insurance, warranty, etc.)
- Transport costs

The determination of the **Net-0-Sales Price [Netto-0-VK]** (with calculation of EBITDA) is automatically performed.

Net-1-Sales Price [Netto-1-VK] is the selling price. This is calculated from the "Net-0-VK" plus the commission.
The commission can be assigned as a percentage or as a value in the calculation.

The **gross margin [DB-Berechnung]** calculation is output as a summary.

Working with foreign currencies

To work with different currencies and exchange rates, there are different options for the conversion factor.
- Base Currency
- Foreign currency

Connection to ERP system

In CADISON®, the calculation can also be done at the level of the "Latest purchase price from ERP", for which the CADISON® ERP interface is required.

"CADISON® Electric-Designer" Enhancements… More Value for Users

Automatic Terminal Drawing Generation

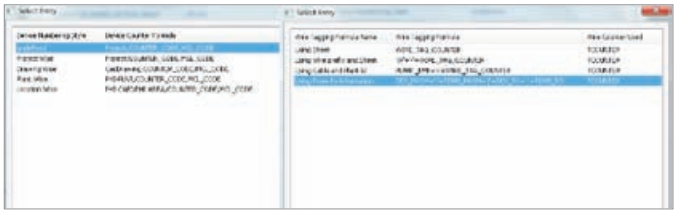
Electrical engineers execute tasks of creating and synchronizing terminal drawings manually.

CADISON® Electric-Designer eliminates manual efforts by fetching the correct terminal details from multiple locations and automates the process of terminal drawing creation with details of connected wires, cables and destination components.

A simple and easy to use terminal strip editor user interface also helps the users to insert required additional terminals.

Multiple Device Tagging & Wire Numbering System

Device Tagging is an important concept wherein the components have to be numbered correctly as per specifications. CADISON® provides multiple options of project specific wiring style to automate tagging system in the drawing as well as in Reports / BOM to increase accuracy, reduce manual efforts and saving time.



"Extracting Bill of material on Panel Layout Drawing" Intelligently addresses needs of a designer as well as purchaser and a panel manufacturer. No need to handle or refer multiple documents since BOM and panel layout is on one sheet. These reports can be further linked to ERP system for procurement.

Automatic Cable Schedule Generation

Cable schedule is a reference report while preparing MTOs of cable for procurement. CADISON® eliminates manual entry of Cable Number, Cable Type, Cable Length, Source & Destination Terminal description by generating accurate & automatic Inter panel and Equipment layout cable schedule.

ISA Tagging System

The Tagging System helps designer to define or identify and graphically represent measurement, control equipments and systems. This feature has more than 150 symbols.

Cable Sizing

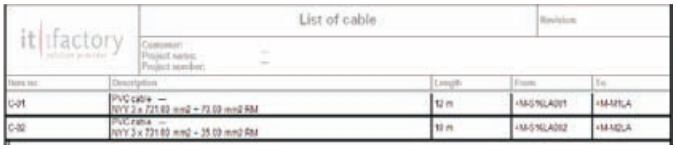
CADISON® enables users to generate an automatic cable sizing calculation report at the calculation stage. Cable Sizing calculations can be done based on user inputs such as Rated Power, Rated Voltage results, Load Current, Actual Current, No. of Runs required. In addition, it also calculates Voltage Drop for the cable.

Cable Tray & Accessories

Plant engineering projects require systems to route control, communication and power cables. CADISON® Electric-Designer helps users to create and design complex routing by using CADISON® Cable trays capabilities with accessories like Bend, Reducers, Elbows etc.

Some advantages are:

- 3D design for accurate visualization
- Automatic 2D extraction from 3D layout
- Automatic BOM for Cable Tray and accessories
- Fill factor and total weight calculation



Some additional enhancements…

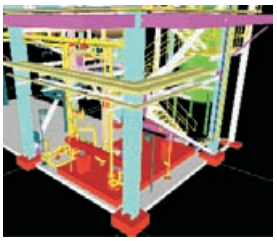
- Additional catalogs for Europe and other regions
- New Ribbon bar which reduces # of clicks
- Additional report templates for different industries
- Creating Junction Box drawing is now made easier
- ETAP Interface for Power System analysis
- Generate Contact sets command to generate devices with distributed representation i.e. relay / contactors with auxiliary contact sets, etc.

Libra Techcon Limited

Libra Techcon is a professional company offering technology / know-how, engineering services related to Chemical Process Plants (with specialization in the field of Methanol and Ethanol downstream chemicals). We provide complete turnkey solutions starting from concept to commissioning & have set up various projects based on our Technology in past 30 years in India and abroad.

"We have been using CADISON® now for over 2 years. We have mainly benefitted in the area of piping. With AutoCAD earlier we had to first prepare piping plan then isometric and then take BOQ manually. Whereas with CADISON® we are able to standardize the catalogs and specifications, create 3D models and extract GA drawings, Isometrics & BOM there by not only save time but eliminate manual errors resulting in cost saving. We are now able to do more projects with same man power. CADISON® has improved the quality of drawings which have been appreciated by our customer and increased our credibility / capabilities."

Milind Bhave
Director, Libra Techon



Business Challenges:
Our Technical consultancy services division provides Design engineering services for key chemical projects in India and EMEA region. With the growing business, it was challenging for us to use primary drafting tool to produce high quality engineering construction packages. Most of the engineering was done at site with material wastage and delays in projects. We decided to standardize on a CAD platform which can help identify clashes, generate isometrics and accurate BOQs. After a thorough evaluation of various CAD softwares, our technical services team finally decided on CADISON® platform. One of the key advantage that was appreciated by our team is that "CADISON® allows to standardize the Catalogs information of Equipments and Pipe specification for different Media which are required for a chemical process and helps re-use the database by modifying the capacity requirements."

Modules Installed: Project-Engineer, 3D-Designer, P&ID-Designer, Electric-Designer & MATPIPE

Galaxy Surfactants

Galaxy Surfactants is a global leader supplying a wide range of innovative products to over 1000 customers in 99 countries. These include world's leading brands like Colgate, Unilever, Henkel, Reckit benckiser.

Our products include specialty chemicals like surfactants, mild surfactants, Rheology modifiers, perlizing agents, conditioning agents, blends based on innovative concepts, proteins for personal care.

"We see benefit mainly in the areas of piping, electrical & instrumentation using CADISON®. Features like automatic extraction of Isometrics, GA drawings, Hookups and various reports in a shorter timeframe will improve efficiency."

Avinash Shinde
Leader, Projects

Business Challenges:
We are an Owner Operator having multiple plants across the globe and owns the process formulation of the plants which is patented and cannot be shared with any external firm.

We decided to setup an Engineering office with a need to maintain our Plant and equipments data of three locations in one Plant Engineering Solution. Main objective of the Engineering office was to support future expansion, technology upgradation and support Maintenance Repair Organization (MRO). One of our main requirements was an integrated software which can simultaneously address multi-disciplinary requirements viz. Mechanical, Piping E&I, Structural. After a thorough evaluation of various softwares and high end solutions, we chose CADISON® as our Plant Engineering Solution. We finalized on CADISON® software from ITandFactory GmbH (a 100% subsidiary of Neilsoft Ltd.) on the basis of excellent technical features, result oriented outputs, appropriate cost, fantastic customer feedback. After the initial training from Neilsoft team, we were able to create Intelligent P&ID diagrams, prepare 3D detailed layout of Equipments, Structures and Piping as well as extract MTO's and BOM in our full format templates. We believe CADISON® will deliver the results which we found during evaluation while implementing it on a large scale project.

Modules Installed: 3D-Designer, P&ID-Designer, Electric-Designer & MATPIPE

WABAG Water Technology AG

The **WABAG Water Technology AG** in Winterthur is the largest supplier of drinking water and wastewater treatment plants in Switzerland and has completed over 50 municipal and industrial projects, including virtually all the country's large lake water treatment plants and other modern facilities. WABAG operates internationally, mainly in western and southern Europe. Apart from Switzerland, we also build plants in Eastern Europe and Asia (e.g. China, Kyrgyzstan).

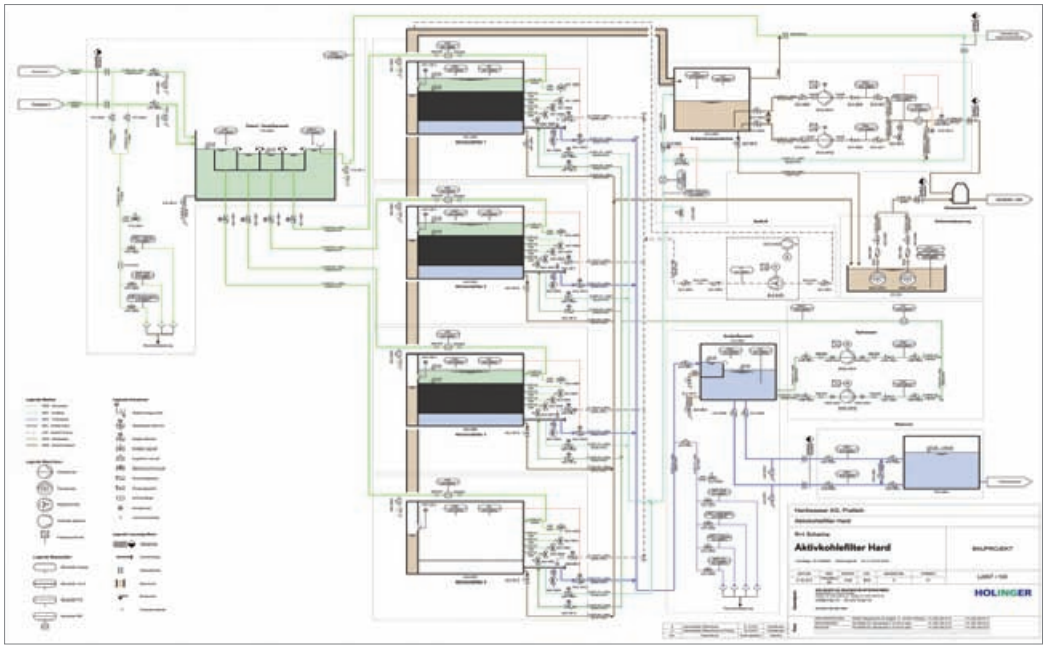


Image: PID of an activated carbon filtration unit drawn with Visio PID Designer

The Winterthur site employs more than 40 employees in the sales, engineering, project management and R&D teams. The range of services includes planning, design, construction, commissioning and servicing - for system components to turnkey systems.

WABAG Water Technology AG was originally a division of Sulzer Brothers AG and is now part of VA TECH WABAG Ltd. Group with its headquarters in Chennai, India. The WABAG Group is represented with offices in 20 countries around the world and has approximately 1,500 employees.

The WABAG Water Technology AG is the technological Competence Centre in the fields of drinking water (multi-barrier system), biofiltration (BIOPUR®) and fluidized bed process (FLUOPUR®).

The WABAG Water Technology AG has been working since 2009 in 3D design with CADISON® pilot projects such as the TWA Muttenz project. WABAG water technology is currently in the process to design integrated projects using CADISON®. The P&ID are designed with the **CADISON® Visio PID**. The next step in the pilot projects is now producing the machinery, apparatus, fittings and instrumentation lists. Currently, WABAG is working towards customization to meet more & more standards of WABAG water technology and also the customized reports required.

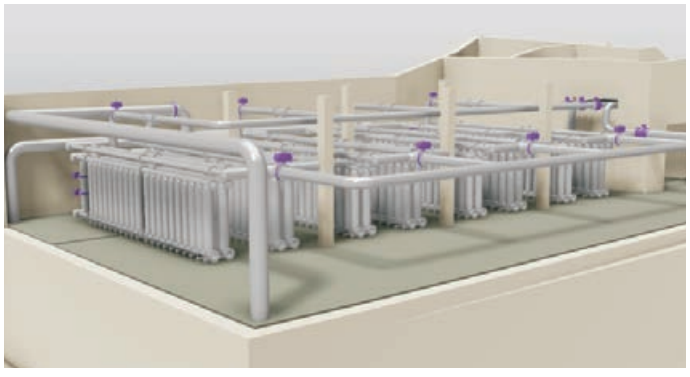


Image: Ultra filtration unit drawn with CADISON® 3D-Designer and finalized with Showcase

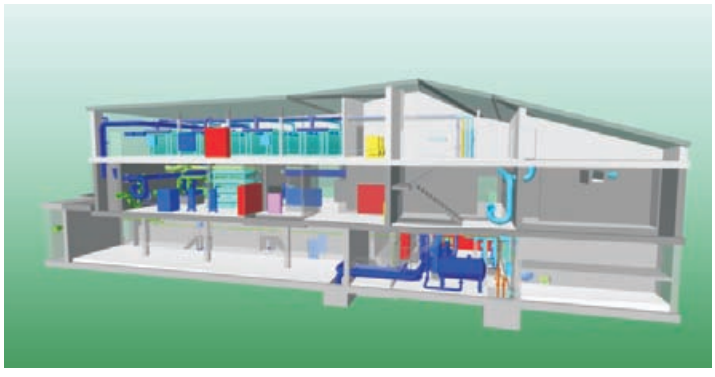


Image: Water treatment plant in Muttenz, Switzerland drawn with CADISON® 3D-Designer and finalized with Navisworks

Alfa Laval Copenhagen A/S

3D Piping Design, Stress Calculations and Secondary supports for a Process Evaporation Plant using CADISON®

Client: A leading global solutions provider in heat transfer, separation and fluid handling technologies with a key focus on Energy & Environment, Food & Pharma and Marine & Diesel Industry.

Client Project: Supply of a process evaporation plant for a customer in the USA for increasing the concentration of Sodium hydroxide (NaOH).

Detailed Piping Design with CADISON®: Neilsoft co-operated with Alfa Laval to perform Modeling of piping components & equipments in CADISON® R13, along with Extraction of piping isometric drawings & piping MTO, Design and detailing of pipe supports, indication of points of support and type of supports, stress analysis for select pipelines using CAESAR II.

Image Courtesy: Alfa Laval Copenhagen A/S

Burkard und Gärtner GmbH & Co. KG

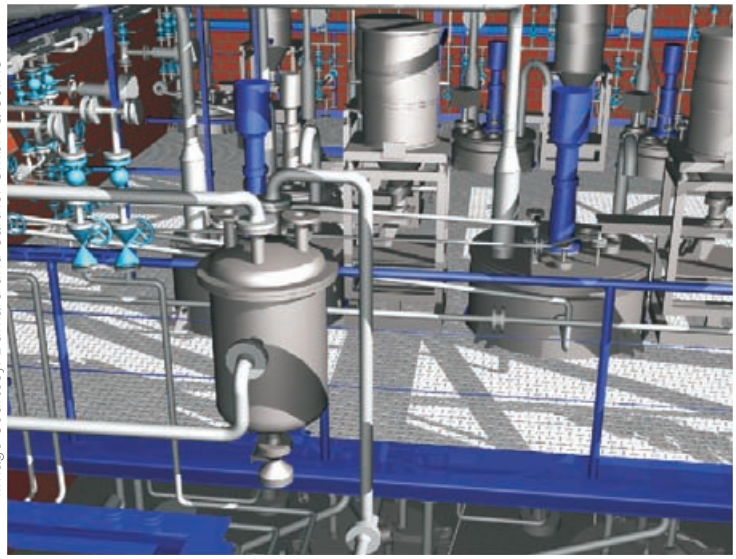


Image Courtesy: Burkard und Gärtner GmbH & Co.KG

"We are a planning and engineering consultants with many years of experience in plant design for chemical, metallurgical , pharmaceutical and food processing industry. Our core competencies include the accomplishment of a project from concept planning through the basic engineering, detailed engineering up to the construction of the plant. For plant design, we standardize on the following modules

- CADISON® P&ID-Designer (AutoCAD-based)
- CADISON® 3D-Designer
- CADISON® MATPIPE
- CADISON® Project-Engineer"

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CADISON®

Plant Design & Equipment Engineering Solution

An Integrated Solution for

- Specification-driven Design
- Cost Calculations & Project Cost Estimate
- Conceptual Engineering
- Intelligent P&ID's
- Intelligent 3D Piping Design
- Intelligent Electrical Schematics and Panel Layouts
- Steel Structures
- Catalogs & Equipment modeling
- Pipe Supports
- ISOGEN Isometrics
- Cable Trays | Ducting
- Project Status Checking
- Design Review & Collision Checking with Navisworks
- Interfaces – ERP, ROHR2, CAESAR II, ETAP, Inventor, MS Project

it and factory
solution provider

ITandFactory is an Engineering Solution provider for design and project engineering of large plants and process equipments. The mission of the company is to provide a 3D Integrated Multi-disciplinary Plant Design & Equipment Solution which will improve the Project Engineering efficiency of its customers by 30% or more compared to many other solutions.
The strengths of our CADISON® solution lies in our engineering data and graphics driven approach with a single common database providing tremendous flexibility for company specific standardization & customization and its ability to automatically generate reports including MTO's for modifications made.

In summary, higher efficiency in plant planning, integration of plant construction and intelligent plant documentation with efficient IT tools are the focus of our solution CADISON®.