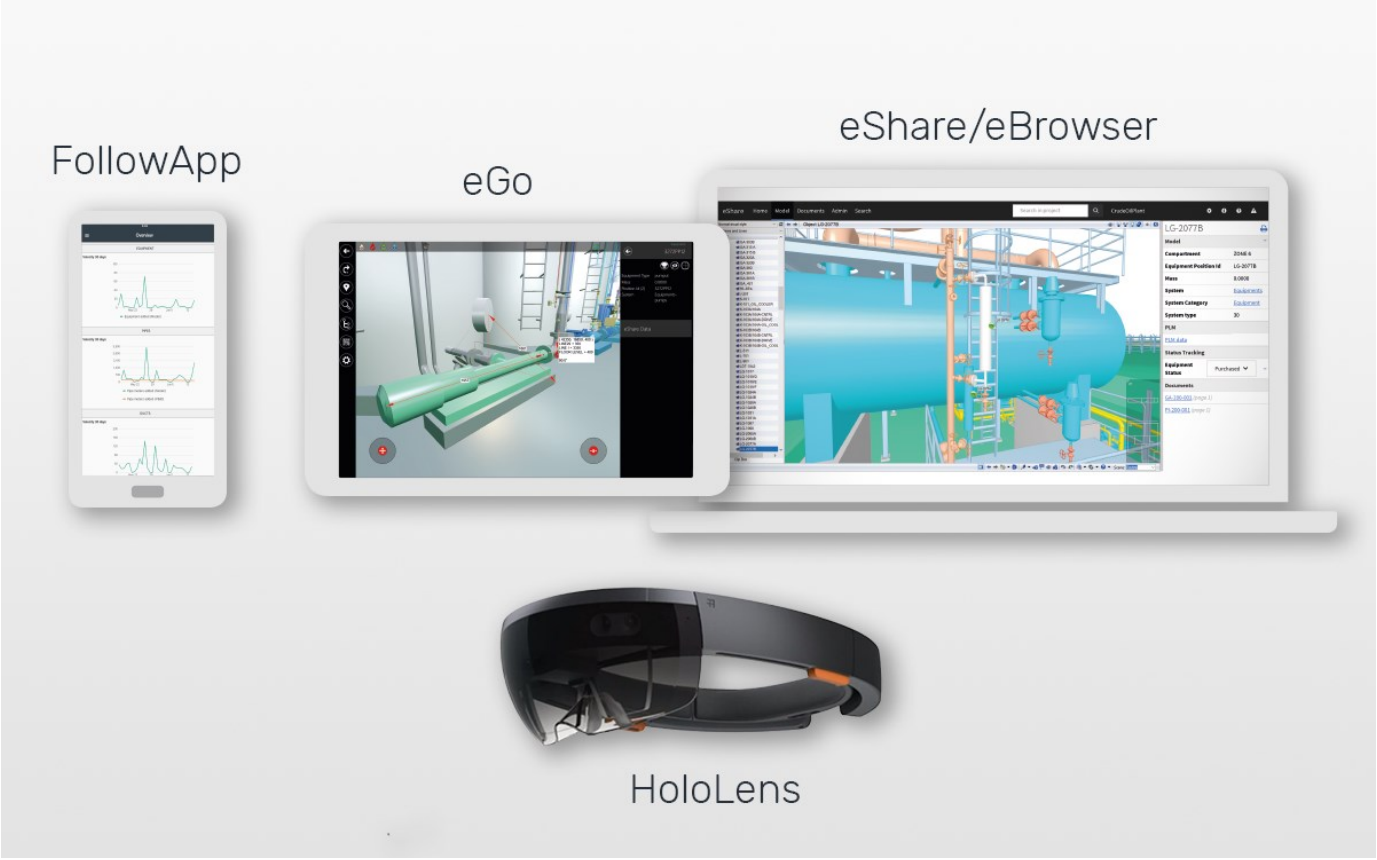
CADMATIC

INFORMATION MANAGEMENT MODULES OVERVIEW

Plant Software Solutions



Contents

eShare (PIM1)

One Tool for 3D, 2D and Project Data from Different Sources

CADMATIC eShare is a project information portal that can be used in a variety of ways either together or without the CADMATIC design applications.

The basic use cases for different stages of projects are:

- During design and construction, project deliverables are published from design applications to CADMATIC eShare, where they can be viewed by all parties involved. The complete, integrated project information model in a single web portal allows easier sharing of deliverables, project status, and communication compared to traditional tools. In this scenario, eShare can be used without additional development.
- During construction, when integrated with other systems such as material management, document management, and construction management, it is easy to visualize the status of the project.
- In the operations phase, CADMATIC eShare makes the design documentation readily available to operations and maintenance personnel. When integrated with the maintenance system or other applications, e.g. for inspection, the 3D model can be used as an interface to access information in those systems.

Publishing the Design Project

There are two ways to get the model into CADMATIC eShare from design applications: automatic or manual publishing. Automatic publishing is the natural choice for design projects, where the latest information needs to be available. For operations, it might make more sense to publish the model manually, so that the model is always as-built.

Documents are published by designers when they complete document revisions. The documents published from the design applications automatically include the metadata from the sheet and document attributes and contain information necessary to link them with the 3D model in CADMATIC eShare.

3D Models in Different Formats (PDMS, PDS, Smart3D etc.)

In addition to publishing information directly from the CADMATIC design applications, eShare can also use models converted to the EBM format from other formats using CADMATIC eXchanger products. The basic functions – viewing the model, searching, categorizations and smart points – are available. Linking with documents requires a document management integration and configuration of document types. Extent of the possibilities for integrations depend on the content of the model data.

Use of Laser Scans to Complement the 3D Model

Point clouds to be added to the eShare server. Currently, the supported format is CPD, originating from the CADMATIC Laser Scan Modeller, PTX and E57. In eShare, point clouds are automatically converted to photo panoramic images, which can be transferred from the server to the user quickly when opened.

Once point clouds have been added to the eShare server, users can directly navigate to between the point clouds that will be shown in photorealistic views and see point clouds alongside the 3D model. It is possible to measure distances between the cloud and 3D objects, add smart points to store notes or other additional information related to the point cloud.

Measurements can be added to the views.

Adding tags with smart points to equipment and point clouds provides the possibility to easily find it in the 3D model and check any integrated information for it from other linked systems, such as maintenance or operation controls and instructions.

Access from Any Computer

CADMATIC eShare is a web application, that opens by entering the server address in the web browser. The user interface has a modern, simple, and clean look, and is easy to become familiar with.

Web technology does not yet support displaying large 3D models natively, so a browser plugin must be installed to view the 3D content. This requires Internet Explorer, but functionality not relying on 3D can be used with other browsers as well.

Typically, CADMATIC eShare is installed on the company's private network (LAN) and can be accessed by devices in the network. To work while out of the office, a VPN connection can be used. It is possible to give access to people in other organizations by implementing a suitable infrastructure; this requires that the users have access to the server and have Windows user accounts.

Access Control

Every user in CADMATIC eShare needs to have a Windows user account which is used to log in directly using Windows authentication, without any login screen. Users can be granted three levels of access. To access a project in eShare, a user account must exist, and the user must be defined as a user in the project. A project administrator of the project can change the permissions of users for the project, and change the project configuration, including configuration of adapters. A system administrator can create and delete projects and has project administrator rights to all projects.

Using eShare as a Handover Tool

Traditionally, project handover has meant sending a bunch of drawings to the client, typically as DWG or PDF files. Some tools may assist this procedure, e.g. a document management system, which controls what documents have been released, and handles the delivery packages. Sometimes, the client demands that all documents be entered into their document management system, which is often a manual task.

When all project documentation is created using CADMATIC, the process can be simplified using CADMATIC eShare managed documents. Designers publish documents to eShare, where the latest revisions are then available. After the project is completed, a backup copy is made of the eShare databases and file repository, and they are transferred to the client. The advantage is that the client does not just receive the documents, but also information about documents' links to the 3D model of the project.

If a continuous handover is required, the client can be given access to the contractor's eShare portal, to view the current status of the project. Then, only those drawings that are approved for release should be published.

Working with eShare

3D Model

When working with the 3D model, CADMATIC eShare has much of the functionality of eBrowser, CADMATIC's 3D review application. Its features include multiple model hierarchies, 3D navigation, clip box, measuring, snapshot images, and markups. As eShare is a browser-based application, it does not support the file-based features of eBrowser: merging model files, comparing model files, and point cloud files.

The user interface of the 3D component is similar to eBrowser, making it easier for people familiar with eBrowser to start using eShare.

It is not mandatory to have a 3D model of every item; for example, at the beginning of a project eShare can work with P&IDs, which are at that time the only visual entry point to the project information.

The 3D model could originate from CADMATIC design applications, or be converted from PDS, PDMS or other formats.

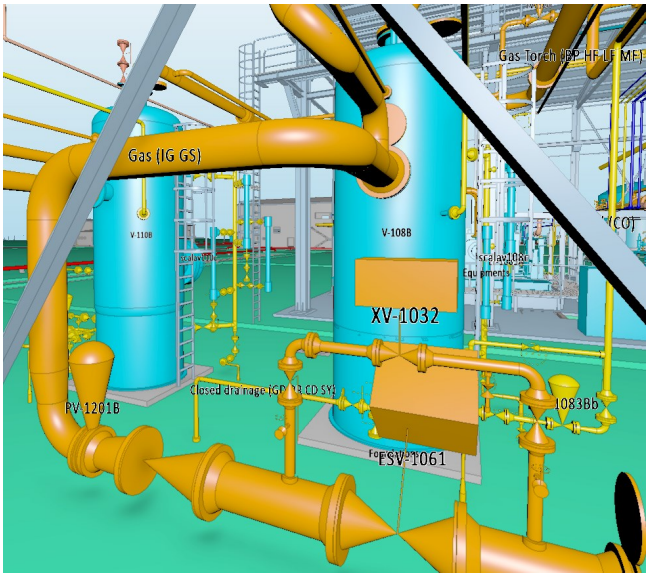
The 3D model is more than the graphics: each item contains attributes, or information, that can be viewed.

Attributes that refer to other model items (in this case the pipeline and system) are shown as hyperlinks, which can be used to quickly navigate to those groups.

The same information can be accessed regardless how the item was found – by browsing the 3D model, by following a link from another item, from a document containing the item, using search, or coming to CADMATIC eShare from another system.

More data is visible – object identifiers for 3D objects in eShare

It is possible to get even more information from navigating 3D models without the need for additional clicks. 3D object identifiers are customizable with 3D labels and position IDs, key attributes or other data. The labels are displayed on top of the 3D model view and are always aligned with the model and move with objects.

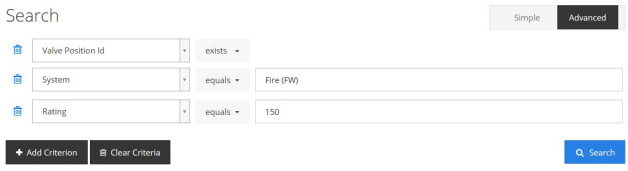


Attributes and other data can be displayed on top of the 3D models.

Searching

Using simple search, items can be found by their IDs, or by textual attribute matching.

Using model search, multiple criteria can be entered. For example, it is possible to find all valves in a specific system, having a certain rating.



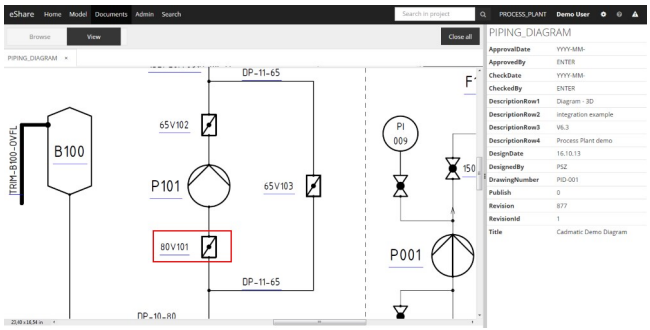
Multiple criteria can be used in model search to find a specific set of items. The resulting items can be viewed in 3D, along with all their information as well as linked documents.

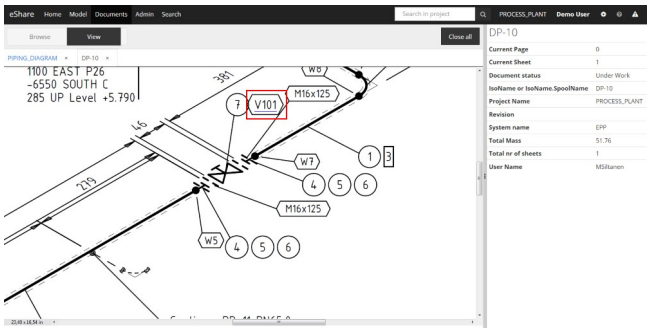
Point and markups search allows finding smart points and markups in a way similar to the model search, i.e. using multiple criteria.

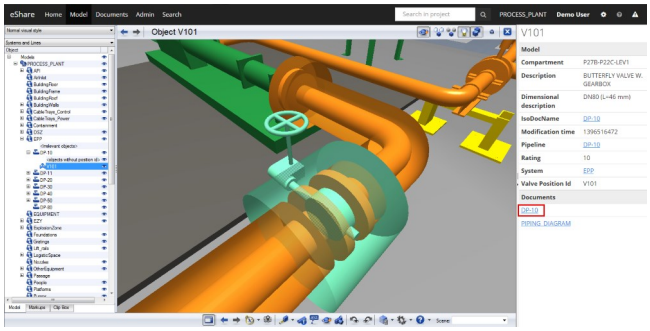
Two-Way Linking of Model and Documents

The total plant information model in CADMATIC eShare consists of the 3D model, data contained in the model, and possible external data and documents. Documents and the model are linked – when you view an item in the model, you can see all the documents associated with it, and when a document contains a plant item with an ID, for example, an equipment or pipeline, you can directly open it from the document, and see all its information from the drawing. This allows flexible navigation paths; you can, for example, start from a P&ID, click on a valve to see where it is physically located, and then access the isometric drawing of the connected pipe.

The documents published from design applications to the CADMATIC eShare are called managed documents – meaning that they are not external data but managed by eShare. The linking is available automatically, as the design applications know the relationships between the model and its documents natively.





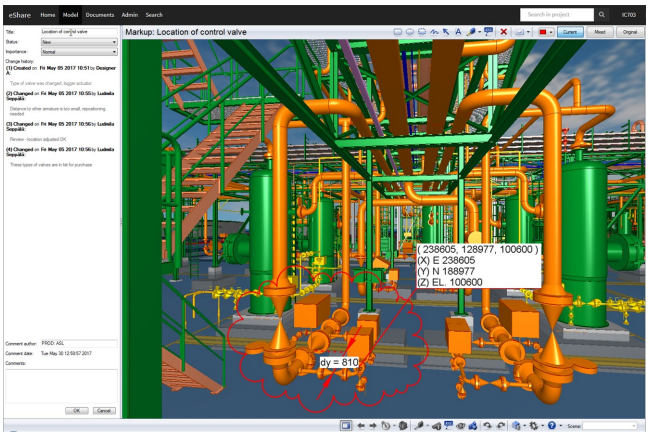


When the valve symbol or label is clicked in P&ID, its 3D representation, and attribute data are shown. All associated documents are also shown.

Markups for Project Review

The collaboration process between designers, building sites, subcontractors and owners often involves discussions related to the 3D model that can be facilitated with markups in CADMATIC eShare. Browsing in 3D has many

advantages – it is possible to literally walk around the project and check any detail. Adding markups on top of the 3D model allows users to communicate their thoughts or insights with other project parties. Project review and management meeting memos can be stored right on top of the 3D model where others can access them immediately.



Markups enable easy communication with all the project parties.

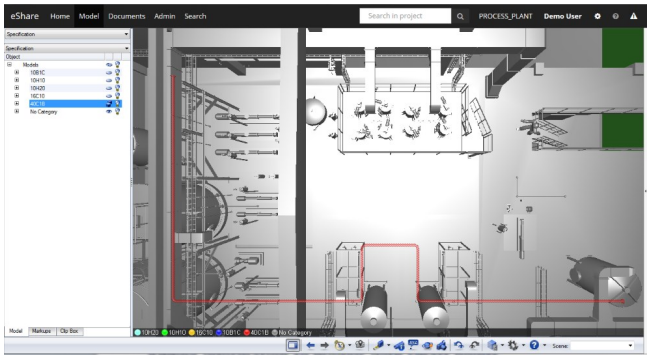
Any CADMATIC eShare user can add markups to the model, indicate with clouds or arrows what the subject is, add coordinates and text and write explanatory notes. Once saved, the markup can be seen by other eShare users on the project. Additional comments and priority levels can be added. If changes are made to the model, it is possible to compare the changes with the markup that requested the changes.

The latest markups in the project and those made by the user are displayed on the CADMATIC eShare home screen. It is possible to import markups from eBrowser of the same model or from another eShare environment. As such, markups from subcontractors and other contributors can be added or updated to the server. If an existing markup is modified, only the modifications are added to and synced with the server. The search mechanism provides the possibility to list all or only certain types of markups as well as export them to Excel lists or EBX markup files to load by eBrowser users.

Visualizing Categories in Design Data

Many times, people get an overview of statuses and trends, or spot anomalies and mistakes just by looking at an image: this is the power behind charts and map-based visualizations, for example. A 3D model can be used for similar purposes, whereas a tool that reports the same findings in other, e.g. textual, formats could be difficult to implement and configure.

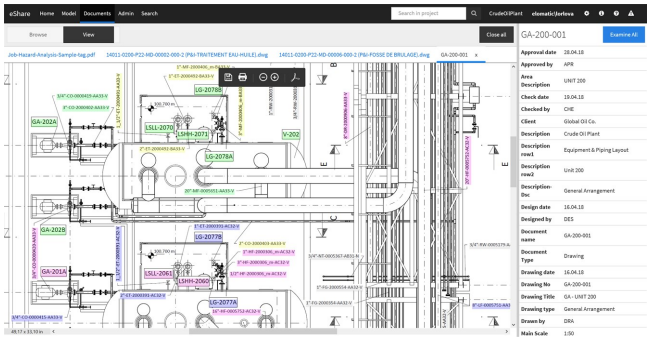
Any attribute in the design model can be used for categorization – the visual display of how the model is divided into categories.

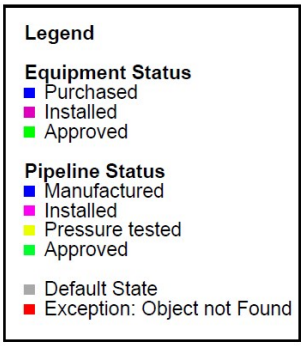


The color coding helps in finding inconsistencies . By controlling visibility of each category individually, it is easy to spot where the specifications are used. Similar visualizations can also be easily configured for other design attributes.

Using Color Coding in Document Link Highlights

Colors are available to convert drawings into easy-to-use and active interfaces to the 3D model. Links in documents can be highlighted with different colors based on the availability of the object in the 3D model. For the most sophisticated cases, links in documents can be highlighted with different colors based on their status in the chosen status tracking. The legend on the side indicates how colors are used.

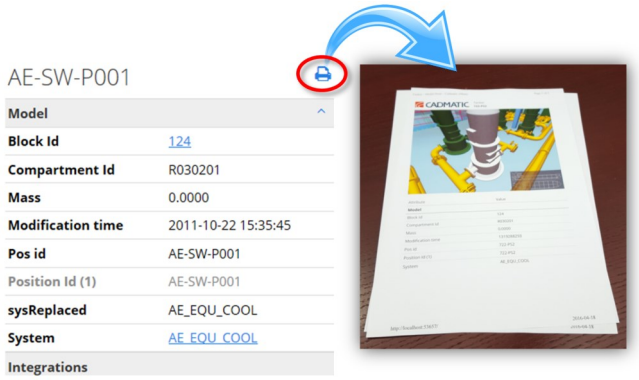




Color coding of links in 2D drawings according to data.

Printouts of the 3D Models and Attributes to Be Taken to the Site

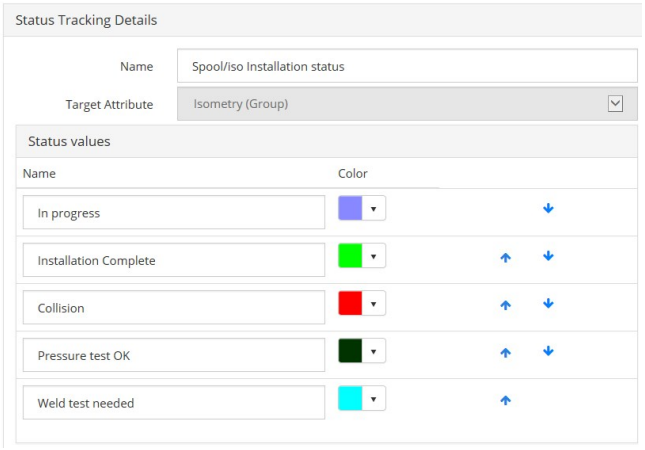
With CADMATIC eShare, it is possible to print images of objects with all the attributes. Also, graphs can be printed. The printouts can be given to sub-constructors as hard copy to the site and used as references or as conversational items when access to the actual system is not available.

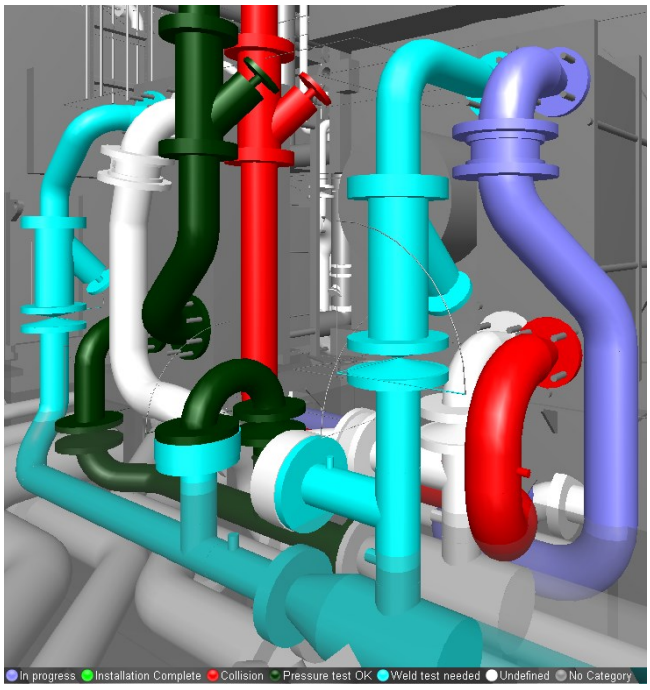


3D view and related attributes can be printed for use when eShare is not accessible.

Status Tracking with Editable Attributes

In CADMATIC eShare, it is possible to easily create status control cases; to assign information about installation, construction, test, or maintenance needs of any items for example. Once possible attribute values are defined for a specific type of object (valve, spool, equipment or a weld for example), the eShare user can change the values, and use them later for reports in Excel, as well as for visualization.





After creating a status tracking case in eShare, it is possible to add information about the status of any item, and visualize it.

Alternative Front-End for eShare– eGo for Windows Tablets

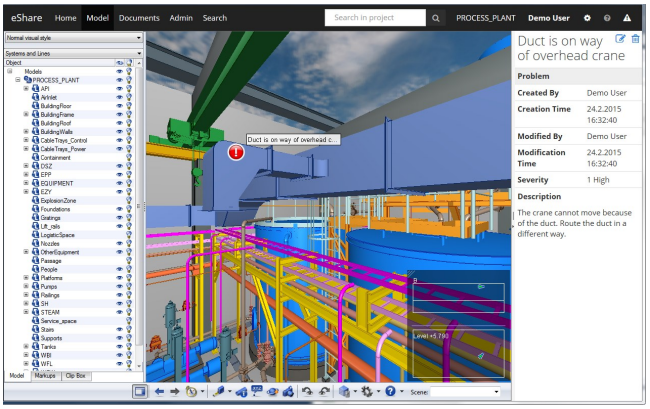
Using CADMATIC eGo application on Windows tablets provides users with most advantage for on-site inspections. The CADMATIC eShare model can be loaded to eGo, making all 3D model information available on the go, i.e. when offline, without access to eShare. Attributes can be edited in eGo while offline, and later synced with eShare. This way, information users add while on site, will be available in eShare for all the other users.

Use eGo on tablet to input or update information about item status and sync it with eShare.

Adding Information to Models with Smart Points

CADMATIC eShare is not only a tool for viewing information, but also a tool for communication – to share comments and ideas, or anything related to the information already there. Smart points are like the sticky notes for 3D: they can be quickly attached to any item in the model when the need arises to make a note about something. Point types can be customized, to have different attributes and appearance. Organizations can define their point types for various purposes such as notes, issues found in reviews, stored knowledge and hyperlinks to external systems.

Points can be viewed, searched and edited. A list of the smart points from the model can be extracted to Excel. Permission settings can limit editing to users or administrators. Smart points create a separate overlay of information in the 3D model that refers to but is independent of the underlying CAD model: if the model changes, the points stay.



Smart points can be used to report potential problems and to link external data. People in different parts of the organization can use eShare to report their findings to the design department.

Extending eShare with Integrations

External information can be added to the CADMATIC eShare data model with adapters. They provide the information in real-time, so it is always up to date and is not copied. This gives new possibilities:

- The external information can be displayed as object attributes.
- Search finds objects, which are not present in the 3D model or documents but are known to external systems.
- External information can be used for visual categorizations and model hierarchies.
- The document linking can be extended from native documents to any documents stored in a document management system.

External attributes can be shown for any item in the model, that has a unique ID, or that refers to a unique ID, such as a material code. Integrations with external systems are based on asset IDs (tag numbers) that are present both in the 3D model and the external data – equipment IDs, line numbers, etc. External information can be shown for the model items, both single objects, and groups of objects, or using smart points if there are no relevant objects in 3D.

Excel Adapter

Excel files are a very popular and easy way to store and exchange all kinds of information within projects. Often, purchasing or production departments use such files extensively. Using the out-of-the-box Excel adapter, the user can merge data stored in these files with other project-related data in CADMATIC eShare. With a simple setup, an Excel file can be linked to project and data displayed for a 3D object or used for hierarchies or in color coding.

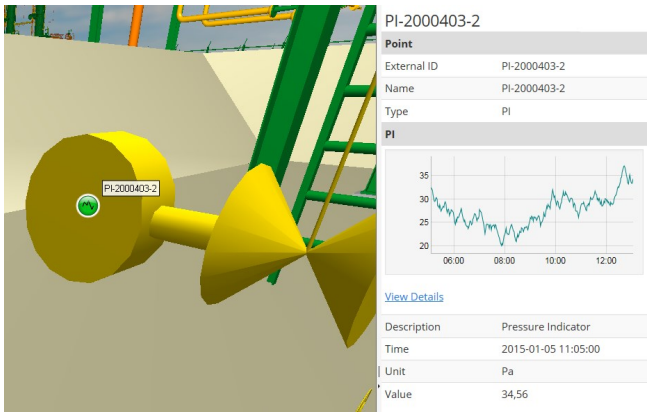
Rating Class	150#
Revision	1
Surface Treatment	V
System	Oil (CO)
Valve Position Id	CO0272
Zone	Zone6
Installation	
Status	Installed
Risk Category	
Risk Class	High
Risk Level	3B

Internal and external attributes: the internal attributes come from the CAD model, and the external attributes shown here are read from a status reporting database, as well as from a risk-based inspection system. External data is not cached, so the real time status is seen, whenever the object is inspected. Attributes that refer to other model items (in this case the system and zone), are shown as hyperlinks, allowing quick navigation to those items.

Loading External Data to Smart Points

Integrations to external systems are based on asset IDs (tag numbers), that are present both in the 3D model, and the external data – equipment IDs, line numbers, etc. But in some cases, the 3D model does not contain such IDs, or even the items themselves. This could be, for example, because they are not needed in 3D modeling, like instruments, or because they are not needed in construction, like inspection points.

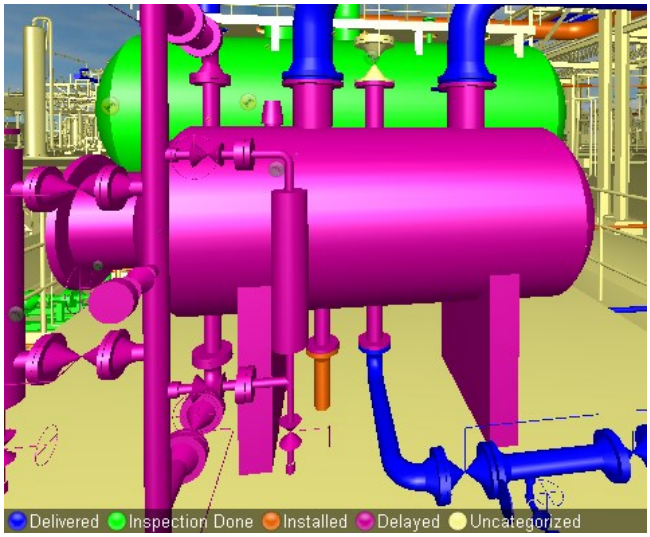
To add the needed IDs to the model without using the CAD tool, CADMATIC eShare allows smart points to be added to the model. They are just points in user-chosen locations, with an ID, that can be used to access information from external systems. Smart points are stored in eShare as a separate layer, so if the 3D model is republished, the points are kept intact. Smart points are typically used when eShare is used during operations.



Accessing a process historian with smart points. The point stores the tag number used by the historian, which is not present in the CAD model. A custom adapter has been developed to show the instrument's current reading, as well as its historical data.

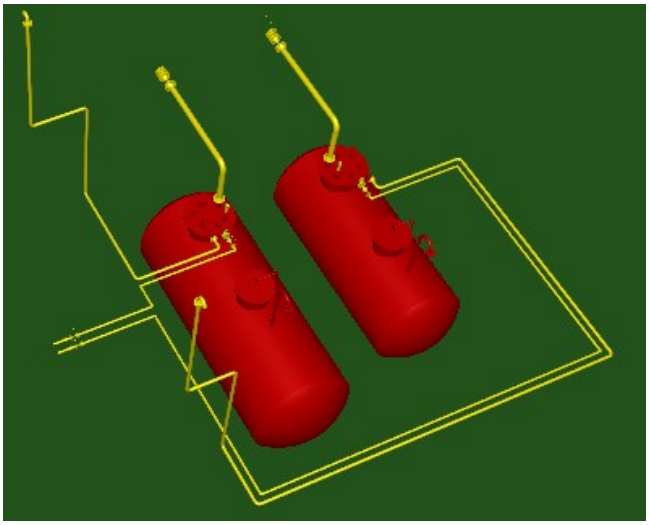
Visualizing External Information

External information that divides a model into distinct categories, such as status values, can be visualized in 3D in two ways: as color coding, or as hierarchies. The color coding displays each category with a specific color, so it is easy to get an overall picture of the situation or to spot areas with a certain color.



Visualizing installation status with colors. The installation status of items, such as piping and equipment, is available in an external database, and the Database Adapter has been configured to provide a categorization based on that data.

Hierarchies can be used similarly to other model hierarchies, for example to drill down items in a certain category, to isolate a category, or to hide items that do not belong to any of the categories, to make it easier to see the visualization.



Items with high or medium risk have been isolated visually by using a hierarchical representation of a categorization.

External Documents

The automatic publishing and linking of documents are limited to native CADMATIC documents, but a project often has more documents that could be linked with the model. A document management adapter makes it possible to make such documents available to CADMATIC eShare, and, with proper configuration, they are integrated with the model like with native managed documents. The formats currently supported are DWG, DXF and DGN. It is also possible to get the native documents to eShare via document management; the advantage is that any information added to the document management such as the structure and status of the documents is available.

Indexing for External Document Adapters

CADMATIC eShare now supports two-way linking between the 3D model and external documents by allowing administrators to enable indexing for external data sources. When indexing is enabled, eShare opens all external documents (of the indexed document data source) in the background and searches for items (links). This information is recorded in the eShare database. CADMATIC eShare can thus show links from the 3D model to items in external documents. After all documents have been indexed, eShare refreshes the index every 2 hours.

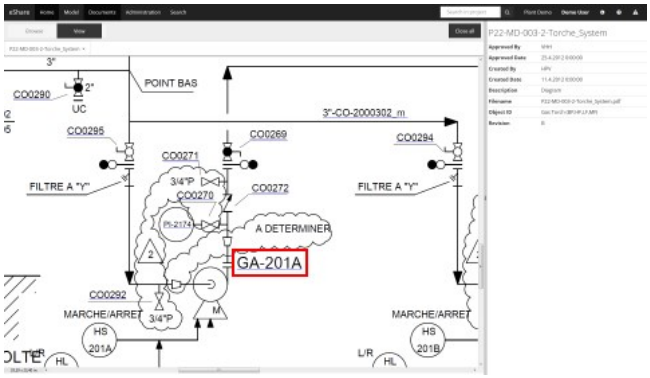
There are three built-in adapters available out of the box. The first supports a scenario where a database contains document metadata and links to the document files, whereas the second can be used to read a simple file folder structure with no attribute data. The third supports the CMIS interface, which is commonly found in document management systems and enterprise content management systems. Custom adapters for document management systems can be developed on demand.

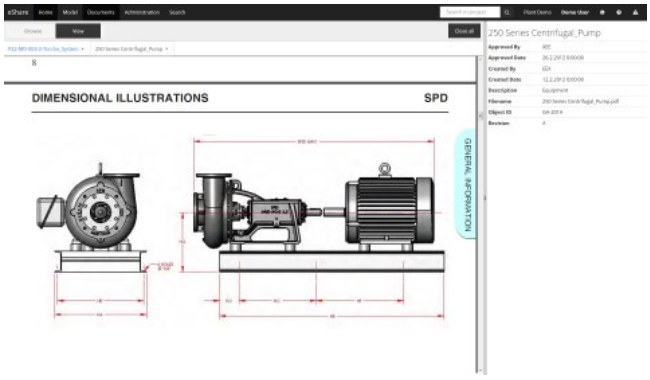
Pattern-Based Linking

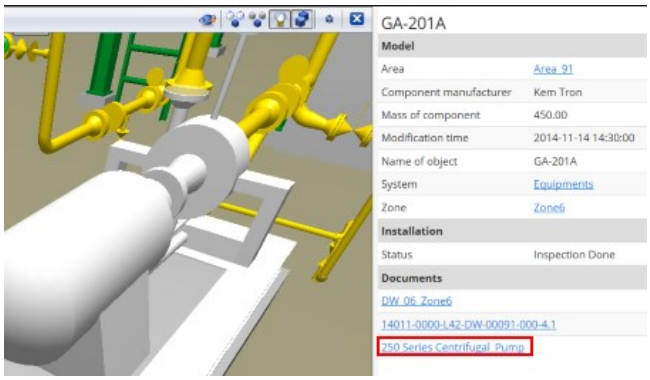
CADMATIC eShare allows two-way linking between the 3D model and documents from the file system document adapter based on the document names. This means that eShare can create a link to a document even if no indexing is used if the document name can be constructed using the model object (or group) attributes. This is especially suitable for creating links to documents with well-formatted names, such as isometric drawings or spool drawings.

CMIS Adapter

Content Management Interoperability Services (CMIS) is a standard for content management systems. Supporting it in CADMATIC eShare means that any system based on CMIS can be integrated with eShare without the need for extra customizations or setup work. CADMATIC eShare uses CMIS to read folder structures and PDF or DWG documents and links them with 3D model items. Currently tested systems include LogicalDoc, Alfresco, and SharePoint.







Linking model with documents in document management. From a P&ID drawing, we can select a pump, and see all its information in the model, because a rule has been configured to match the text in the document with the object ID in the model. We can then open another document associated with the pump, as the document attributes contain the pump's position ID – it can also be its manufacturer code, as the model may contain many similar pumps, but only one document is stored for them.

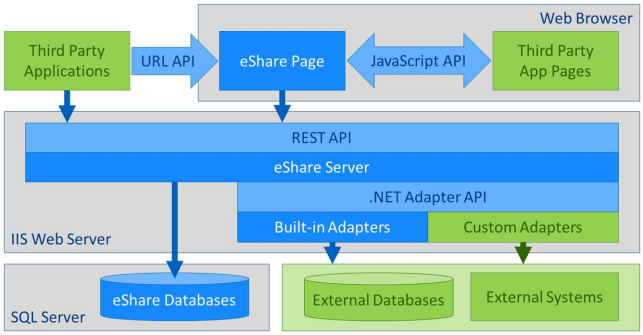
Based on document metadata, the configuration of model-document associations, document types, and ID detection rules makes it possible to establish two-way linking. For links from the model to documents, this requires either indexing to be used or that the document management system either supports linking to documents with asset IDs natively, or that custom attributes have been used to specify which item, e.g. piping system, the document belongs to. For links from documents to the model, the documents must be searchable PDFs, and contain labels that can be mapped to IDs in the model, either directly, or using conversion rules. In order for a PDF to be searchable, its text must not be converted to graphics, meaning the option to convert text to graphics must be deselected when exporting to PDF. PDF files exported from CADMATIC are searchable when using Windows fonts. AutoCAD DWG files that use AutoCAD fonts can be made searchable when converted to PDF using Adobe Acrobat Pro or CADMATIC 2D Viewer.

When using managed documents for CADMATIC documents, no special adapter or configuration is needed in CADMATIC eShare.

Advanced Customization

Four application programming interfaces are available that allow custom development:

- URL API, allowing the opening of specific CADMATIC eShare content in the web browser from external systems
- JavaScript API, allowing bidirectional communication with third party web pages
- .NET Adapter API (future), allowing access to third party data from CADMATIC eShare
- REST API (future), allowing access to CADMATIC eShare web services



Adapter API – the Gateway to External Information

External information is provided by adapters. There is a built-in database adapter that can be configured to read data from sources that support the SQL language and have an OLE DB provider or ODBC driver. Microsoft SQL Server and Oracle databases are supported natively. This adapter can be used to provide attributes and categorizations, as well as documents when the document metadata is stored in a database and the document files in file system folders.

Custom adapters can be written on demand. They can use a variety of methods to communicate with the external system, for example, web services, or DLLs (API libraries) from third party vendors.

Navigation between eShare and Other Applications

An alternative to showing information directly in CADMATIC eShare is to allow users to navigate to the native user interface in the other application, or vice versa. There are two ways to achieve this:

- With hyperlink integration, navigation is based on URL addresses supported by the two systems. CADMATIC eShare has an URL format that can be used by another application to open a specific item. Using eShare's hyperlink adapter, one can open an external application and show the same item that was selected in eShare, by constructing an URL address supported by that system. The advantage of this integration type is that it may be possible to implement it by simply configuring the two systems.
- With JavaScript integration, both systems can open each other in new browser tabs. They can control each other to show specific items. The advantage of this integration type is that multiple tabs or browser windows are not opened; for example, you only get one 3D model instead of a new one for each opened item. However, the integration requires custom development of the other application.

eBrowser (PB1–PB4)

The ultimate project review tool allows users to walk through the 3D model or point clouds, combine several models into one or compare them with each other, check collisions, easily locate and check details about any object, get dimensions and make markups for project coordination and change management.

Key Features

- Stand-alone browser with support for multiple file formats: EBM (native CADMATIC format), DWG, DFX, IFC, DGN.
- Possibility to merge models from different formats and sources and subset parts of the models into a separate file.
- Comparison of 3D models, including metadata and clash check.
- Possibility to upload point clouds with photorealistic panoramic views.
- Simple and efficient navigation using 3D or model hierarchy.
- Control of visibility, transparency and color of objects.
- Attributes and metadata from design models.

Main Benefits

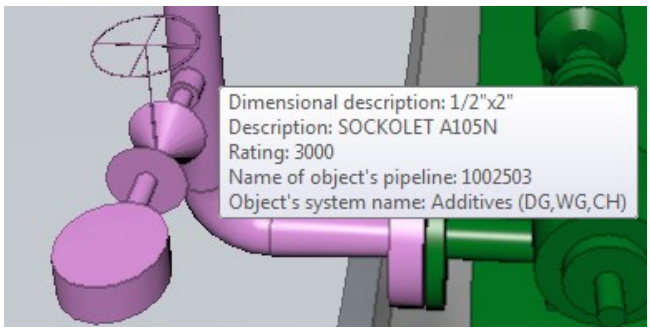
- Small file sizes: a complete model of a complex factory including all disciplines will take only a few Mb of disk space and can be sent via email.
- Combine or compare several 3D models.
- Walk through the project virtually, check all the details of any object.
- Check designs for clashes in 3D.
- Use markups for change management and discussions with other project partners.
- Load point clouds to compare new designs and existing structures.
- Free limited version available from www.cadmatic.com.

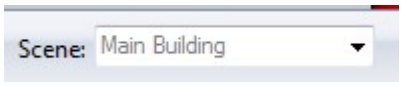
Models from CADMATIC, IFC and Other CAD Formats

CADMATIC eBrowser supports opening models, generated from CADMATIC Design software, files with an .ebm extension and files in IFC format. eBrowser files can also be generated via CADMATIC eXchangers (PDMS, PDS, SmartPlant 3D). In this case, the project originating from these programs can be opened in eBrowser with all the intelligence included – colors, attributes, coordinates, etc.

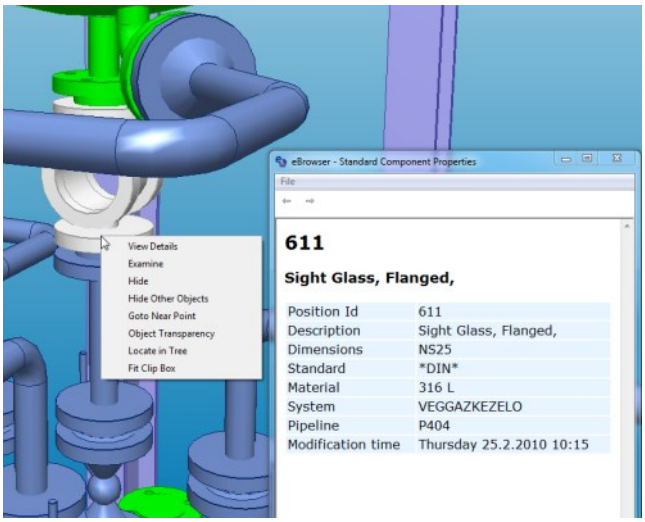
Efficient 3D Model Review

- Navigate in the 3D model with a mouse.
- Use predefined scenes in the model to jump from one location to another.
- Configurable property tips to quickly show information about any object.
- Check any object details with a mouse click.
- Measurements including distances from the surfaces of pipes.
- Hierarchies and model tree for visibility control.
- Search for any data.
- Clip the model view box to limit viewing to only one part of the model.
- Control visualizations in the model with hiding, transparent, examine, and x-ray modes.

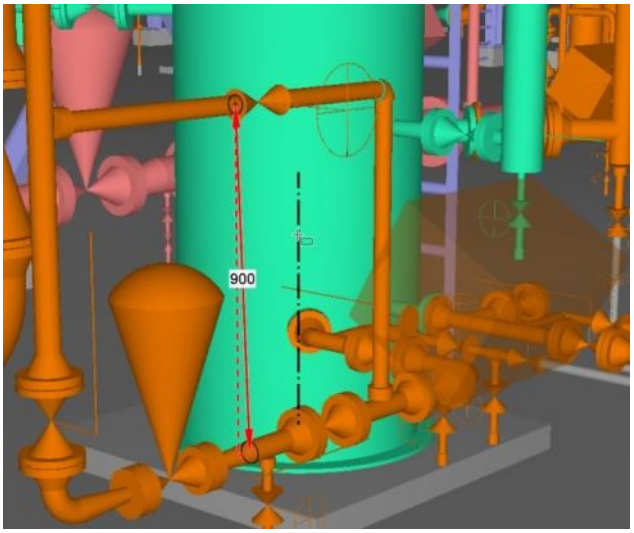




Configurable object property tooltips



Complete object properties can be shown



Measurements from the model

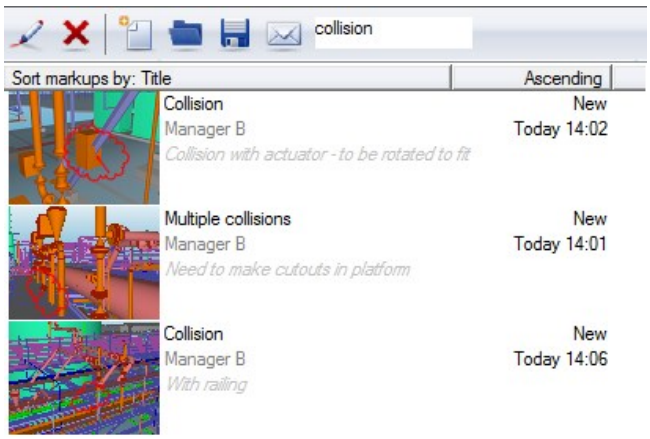
The user can optimize work in the model with various settings: selecting measurement units, controlling view distance (how far you see from each point), moving and turning speed, level of optimization (frames per second).

Additionally, there are visualization settings for better representation of the model: background image, highlighting materials, transparency intensity.

Project Coordination and Collaboration

Designers, engineers, subcontractors, and end clients are linked to a 3D model that allows easy project reviews, facilitated by the ability to virtually walk around the design area and access all design data. The use of smart visualization techniques makes the 3D models very light. This makes distribution by email or over the Internet, for example, very easy.

- Markups for storing any discussion about the model.
- Merging models: loading several models, relocating models and saving the merged models into one.
- Comparison of the 3D models.



Markups allow storing and sharing project review information

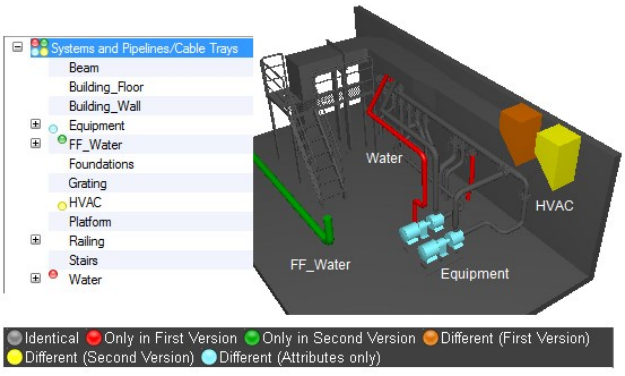
Check Models for Clashes

In addition to efficient browsing of 3D models, comparison tools and storing discussions, it is now possible to check for collisions directly in eBrowser. The collision detector inside eBrowser enables users to gain deeper insight into the 3D model and combine 3D models from different sources and check consistency between disciplines.

Collision Reports Visualized in eBrowser

It is possible to check for clashes directly in CADMATIC eBrowser. The collision detector inside eBrowser enables users to gain deeper insight into the 3D model, combine 3D models from different sources, and check consistency between disciplines.

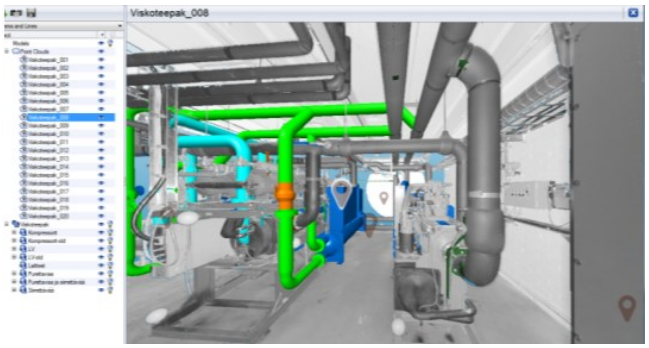
Clash reports generated by design modules can be uploaded to eBrowser and visualized in 3D.



Collision checking helps finding design flaws.

Point Clouds in eBrowser

User can load point clouds into eBrowser and merge them with a 3D model for visual comparison and distance measurements. Photopanoramic views optimize point cloud data and provide the possibility to jump from one location to another.



Point clouds and 3D model can be visualized at the same time

Data Interfaces

- eBrowser supports opening models, generated from CADMATIC Design software, files with the .ebm extension and files in the following formats: IFC, DGW, DFX, DGN.
- eBrowser files can also be generated via CADMATIC eXchangers (PDMS, PDS, SmartPlant 3D). In this case, the projects originating from these programs can be opened in eBrowser with all the intelligence included – colors, attributes, coordinates, etc.
- Markups are stored in the EBX format and can be exported and imported from other users of the same model.
- Collision reports can be loaded from CADMATIC Design application in XLS format.
- Point clouds can be uploaded in formats: CPD, E57, PTX.

eGo (PB5)

CADMATIC eGo enables plant owners, engineering planners, technical managers and other stakeholders in industrial projects to access the complete 3D model and design documents of new buildings and retrofitted constructions anytime, anywhere.

Key Features

- Get detailed 3D models by downloading from CADMATIC eShare or by opening CADMATIC eBrowser model files. Third-party 3D models can be converted with CADMATIC eXchangers for Aveva PDMS®, Intergraph PDS® and Intergraph Smart® 3D.
- Get project documentation (process flow diagrams, P&IDs, electrical diagrams, isometric drawings), component manufacturer documentation (component data sheets, installation instructions), and any other relevant documents from CADMATIC eShare.
- Browse 3D models and documentation offline, regardless of your location.
- Navigate in the 3D model using a touch screen, mouse or keyboard.
- Jump from a 3D object to the same object in a document, or vice versa.
- Find specific 3D model objects by using the search or reading a QR code.
- Measure distances in the 3D model.
- Add markups that consist of text, screen captures, 2D drawings and photos, and synchronize the markups to CADMATIC eShare.
- Update object-specific status information, show objects in colors indicating their status, and synchronize the status values with CADMATIC eShare.

Main Benefits

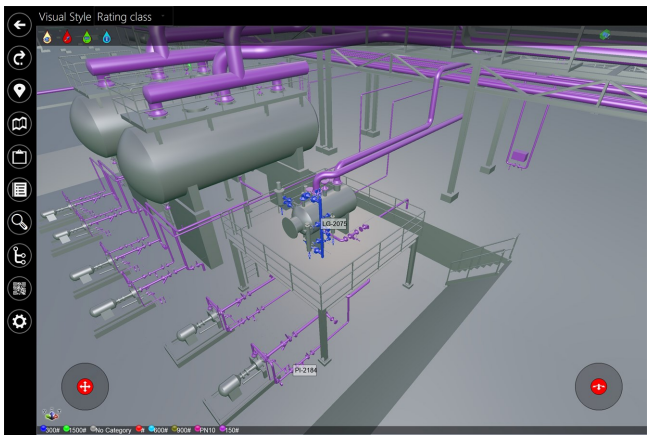
- Highly detailed 3D models and documents available on the go.
- Commonly used, easily transferable 3D model format.
- Visual tracking of project status.
- Up-to-date project data available from CADMATIC eShare.

3D Model with Documentation on the Go

You can install CADMATIC eGo on an off-the-shelf Microsoft Windows® tablet device and take on the road. 3D models with piping drawings, HVAC drawings, electrical drawings and other project documentation travel with you, and you can quickly check facts during meetings, phone calls, and site visits.

Facilitated Reviews

CADMATIC eGo adds intelligence and convenience to on-site planning and inspection rounds. As design data is completely portable, you can easily compare the digital design to the real-world objects, note down your observations, take photos, and attach the gathered information directly to the 3D model.



Use colors to visualize design data such as materials and nominal sizes.

Visual Status Tracking

3D model objects can have attributes that enable status tracking data to be gathered step by step—while walking around with CADMATIC eGo. For example, there can be an inspection status attribute for marking parts as having been delivered to the site, installed in the plant, and then either approved or rejected.

Status values can have a predefined status workflow, which can prevent unintentional, erroneous status changes from being made.

As the 3D model can show objects in colors that represent their current status values, status information can be visually acquired from the model. After synchronization, the updated statuses are also visible in eShare.

Get all your project data on a tablet.

Common 3D Model Format

CADMATIC eGo uses the same 3D model format as other CADMATIC products that use a 3D model viewer, such as eBrowser and eShare. You can use eGo to open eBrowser model files that you have stored in the tablet device.

CADMATIC eGo can also open 3D models created in other commonly used software systems. First the third-party models must be converted into CADMATIC eBrowser files with CADMATIC eXchangers.

Synchronization via CADMATIC eShare

You can get the most out of CADMATIC eGo by connecting it to your organization's network, and to CADMATIC eShare. Then you can download the latest 3D models and their documentation, and at the same time upload the data you have added or edited in eGo, to make the changes available to other people—also to users of the eShare for HoloLens augmented reality application.

Data Interfaces

- Download project data from CADMATIC eShare: 3D models, documents, markups.
- Open 3D models stored in the tablet in CADMATIC eBrowser (.ebm) format.
- Upload markups and updated status tracking values to CADMATIC eShare.

eShare for HoloLens (PB6)

CADMATIC eShare for HoloLens is an app that allows the user to interface Microsoft HoloLens* with CADMATIC eShare. It offers an entirely new interactive design and engineering experience in augmented reality where digital 3D models reside in the real-world environment.

Key Features

- Load models from the eShare server and use them offline.
- Align 3D model with existing environment.
- Load and visualize object data from eShare or any connected system.
- Measure distances between digital items, digital and real items, or just real items.
- Shared experience for collaboration in multi-user environment.
- The app is free of charge for users of CADMATIC eShare version 2018T3 and higher.

Main Benefits

- Full experience of AR and possibility to review digital design data on site: the users can align the model with the actual installations and see proposed changes or future designs on top of the existing environment.
- For on-site work, users can download models for offline use and bring it to the building site.
- Complete mobility in project review on site – does not require cable connection to computer or laptop.
- The scaled model can be viewed on a meeting room table, or the user can walk through the full-size model in an office or any open space.

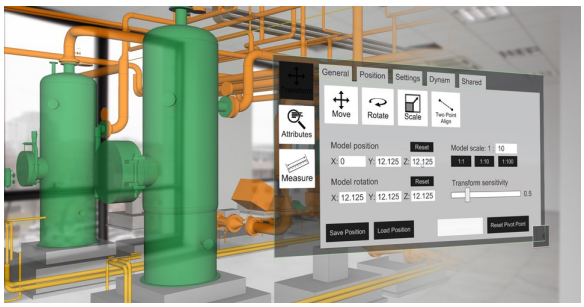
Facilitate Project Reviews in AR

CADMATIC eShare for HoloLens aims to facilitate project and design reviews in AR. It assists construction status supervision and the comparison of design projects with as-built situations. It also helps users to show future project designs during discussions with owners, operators and EPC contractors and provides the possibility to ensure good ergonomics as well as the training of maintenance and operational staff already during the design phase.

The user can walk through the full-size model in an office.

3D Model and Data from eShare in AR

CADMATIC eShare for HoloLens provides a new way of utilizing eShare data. It includes tools for loading the 3D model from the server and using it offline, scaling, moving and aligning the model with real objects, showing attribute data and taking measurements.



The 3D model with its associated data.

*Microsoft™ and HoloLens™ are registered trademarks of Microsoft Corporation

sales@cadmatic.com | www.cadmatic.com

FollowApp (PB7)

Take business decisions to a new level – accurate and up-to-date project progress with CADMATIC FollowApp for mobile devices.

Key Features

- The metrics are stored in a cloud service provided by CADMATIC.
- Automatic, scheduled publishing.
- Web interface for access control.
- Demo data allows trying the app without having CADMATIC projects/licenses.
- Using the app is currently free of charge.

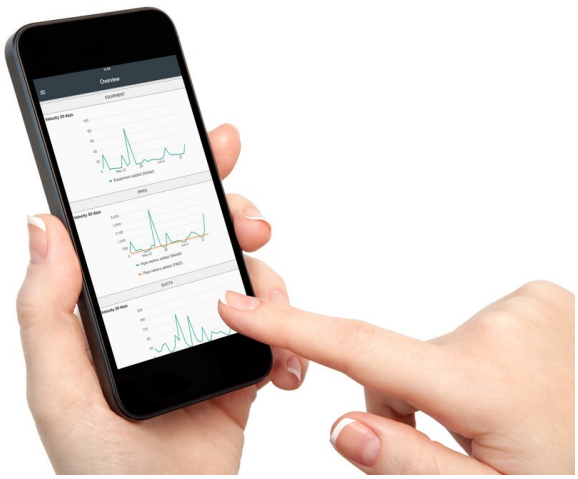
Main Benefits

- Essential project metrics of ongoing and past projects are conveniently on your mobile phone at any time.
- In-app reports provide visibility to key project metrics regardless of physical location.
- Reduce the uncertainty of new project time and cost estimation with easy access to legacy data of previous project metrics.

Follow the Status of Your Projects

CADMATIC FollowApp allows stakeholders of CADMATIC design projects to view various project metrics conveniently from their phone. These metrics, which include for example the total length of pipes, total mass of pipes and pipe fittings, and number of pipelines, are automatically uploaded at scheduled times from CADMATIC Plant.

The metrics are stored in a cloud service provided by CADMATIC. Publishing requires a valid CADMATIC 3D Plant license. Actual design data is not published, and only authenticated users can access the service. System administrators can control who is allowed to use the app to access the metrics of a specific design project.



Follow the status of your projects from your mobile phone.