



Release Highlights 2022T2

Top Picks – what we're most excited about in 2022T2!

Outfitting/3D Plant Design

- In our ongoing efforts to ease the work of designers and administrators, we have introduced a handy feature that **automatically calculates bolt lengths**. It reduces manual administration work and improves design quality by eliminating human error.
- You can now create **pipng isometric drawings** much faster. Production tree-based management makes it easy to control whether all pipes are included in isometric drawings. It's super easy to see whether the drawings are up to date and when you modify a pipe in 3D, the status of the isometric drawing is automatically updated.
- It's now even easier to start using **Cable Router** as you can do so with or without the use of compartments. Collision control has been added for cable head/tail end jumps and you can create labels with cable data and fill rates with ease. Give it a try and let us know what you think!

Hull

- The design of shell plates is now even easier and faster. With just one click, the system **automatically detects the relations that form an enclosed shape** and creates the corresponding plate or shell. You can officially say goodbye to manually selecting each plate or shell relation (border).
- We now offer practically fully topological 3D model **export to the new OCX standard**. You no longer need to generate a bunch of dedicated class drawings, just give the classification society access to the 3D model via easy OCX export. We hope you're as happy as us about how much time and work this will save!

Information Management

- We've been working hard on developing a groundbreaking **new user interface for eShare** that we know you'll love. It's not fully ready yet, and several key features will be launched only in our 2022T3 release, but we just could not resist giving you a sneak peek already now in this public preview version. The UI is plugin-free, which means that you'll soon be able to use eShare on the operating system and browser of your choice.

Electrical

- The **user experience** in CADMATIC Electrical has been taken to a totally new level in 2022T2 with a completely new and user-friendly method of handling groups and feeders. We have renewed a bunch of under-the-hood features and overhauled the user interface. Words don't do justice to how much things have changed, so just dive in and experience it.
- The **new wiring interface** allows users to draw different wiring types with one centralized tool! You can also quickly edit the wiring data in the same interface. Once you've made changes, they are automatically updated to all drawings. In addition, you can now easily create and manage

wiring sets in the Schematics application with this new interface.

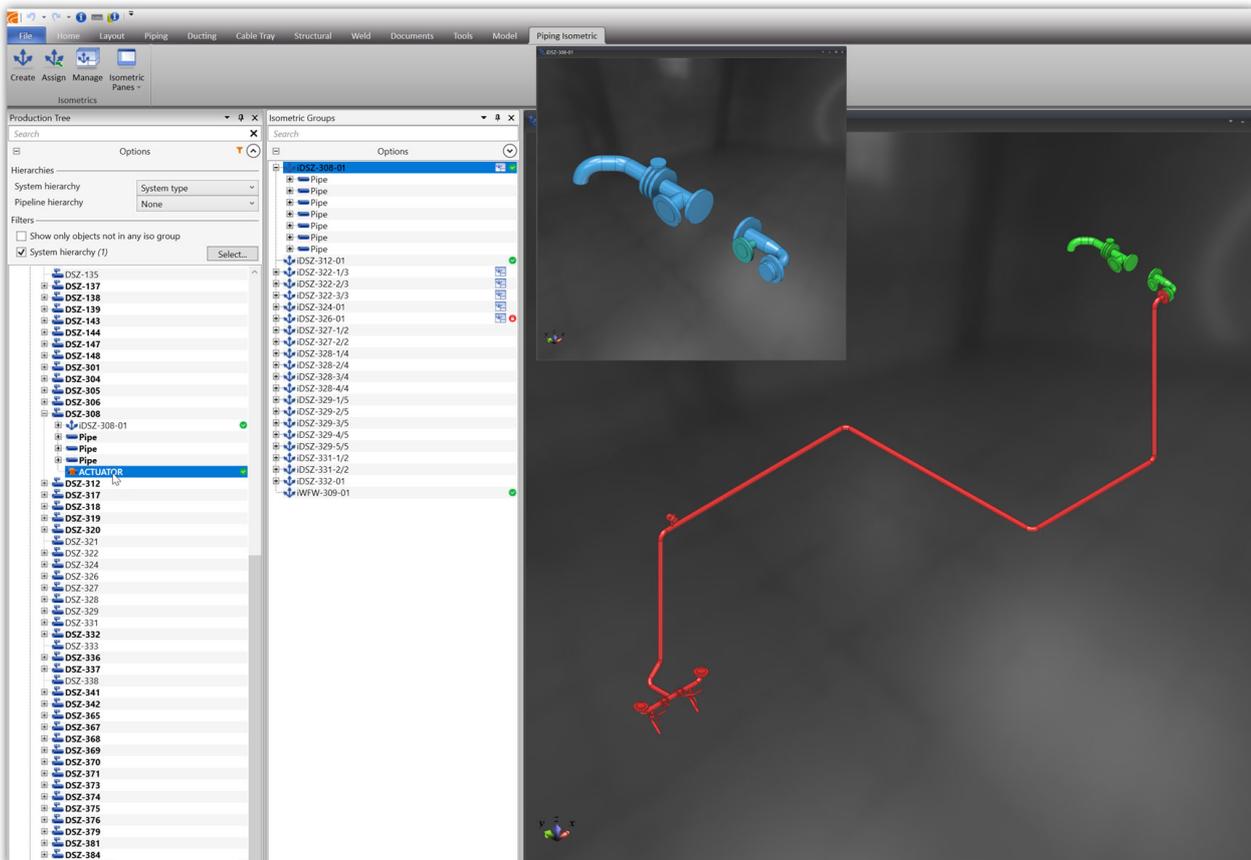
Web API

- The Web API has **new endpoints for library part handling** and 3D model import as well as improved on-line documentation for integration developers.

Outfitting/3D Plant Design

Document tree

In a previous CADMATIC release we introduced the concept of **model tree** panes which provide a hierarchical list of all the groups and objects in the 3D model. In 2022T2 we introduce the concept of **document tree** panes which provide a list of documents of a specific type and for each document there is a hierarchical list of entities that are associated with the document. The first document type that utilizes this new pane is piping isometrics.

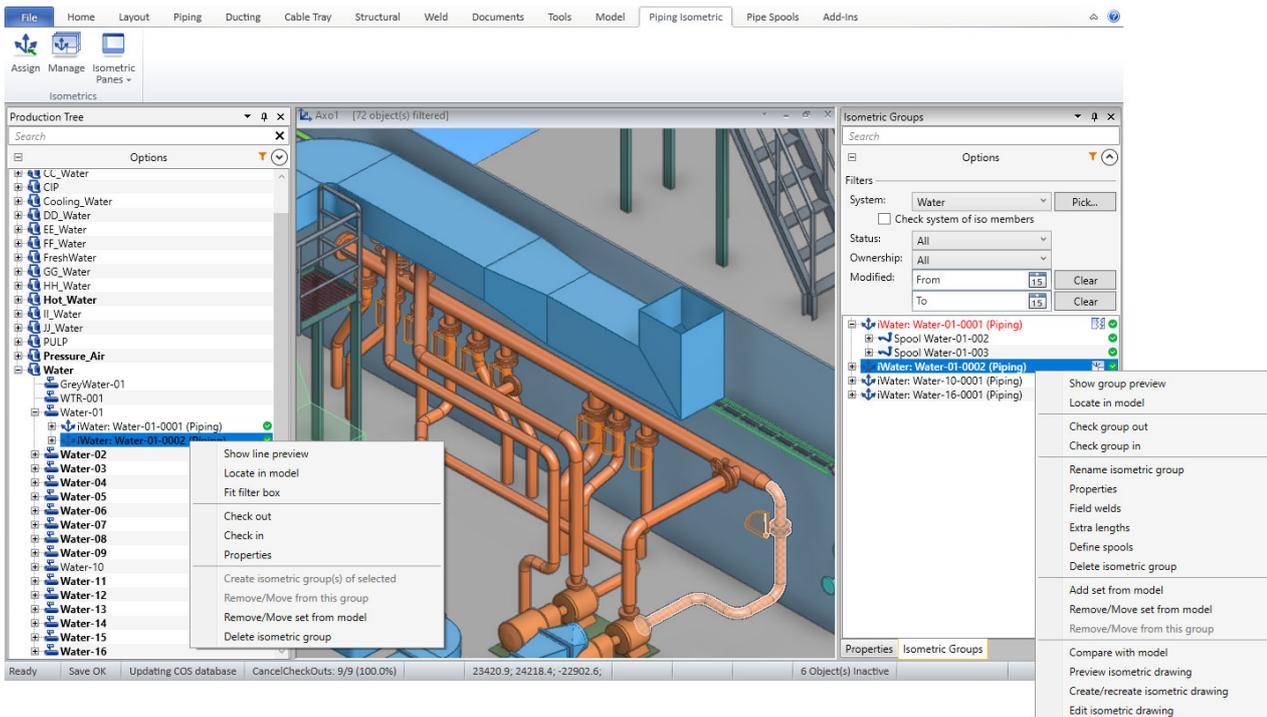


Isometric documents in Plant Modeller

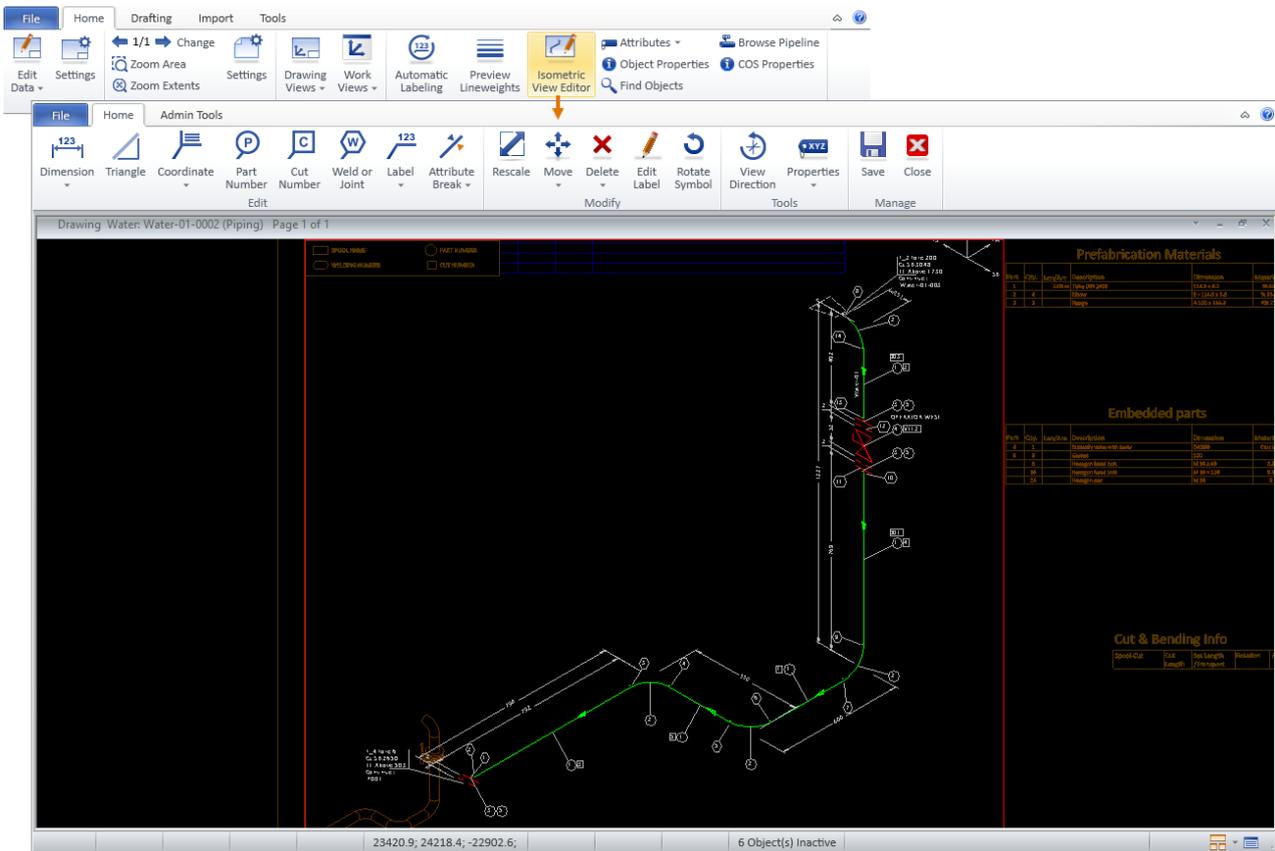
In 2022T2, the Plant Modeller ribbon interface can be used for production of isometric documents.

Although the separate Piping Isometrics & Spools application is still available, the same functions are now more easily available on the new **Piping Isometric** tab, which greatly improves the user experience of creating and modifying isometric groups and isometric drawings. Almost all the related actions can be managed via two dockable panes:

- **Production Tree** pane provides a hierarchical entity tree and is used for creating, modifying, and deleting isometric groups.
- **Isometric Groups** pane is used for managing isometric groups, creating isometric documents, and accessing the document editor.



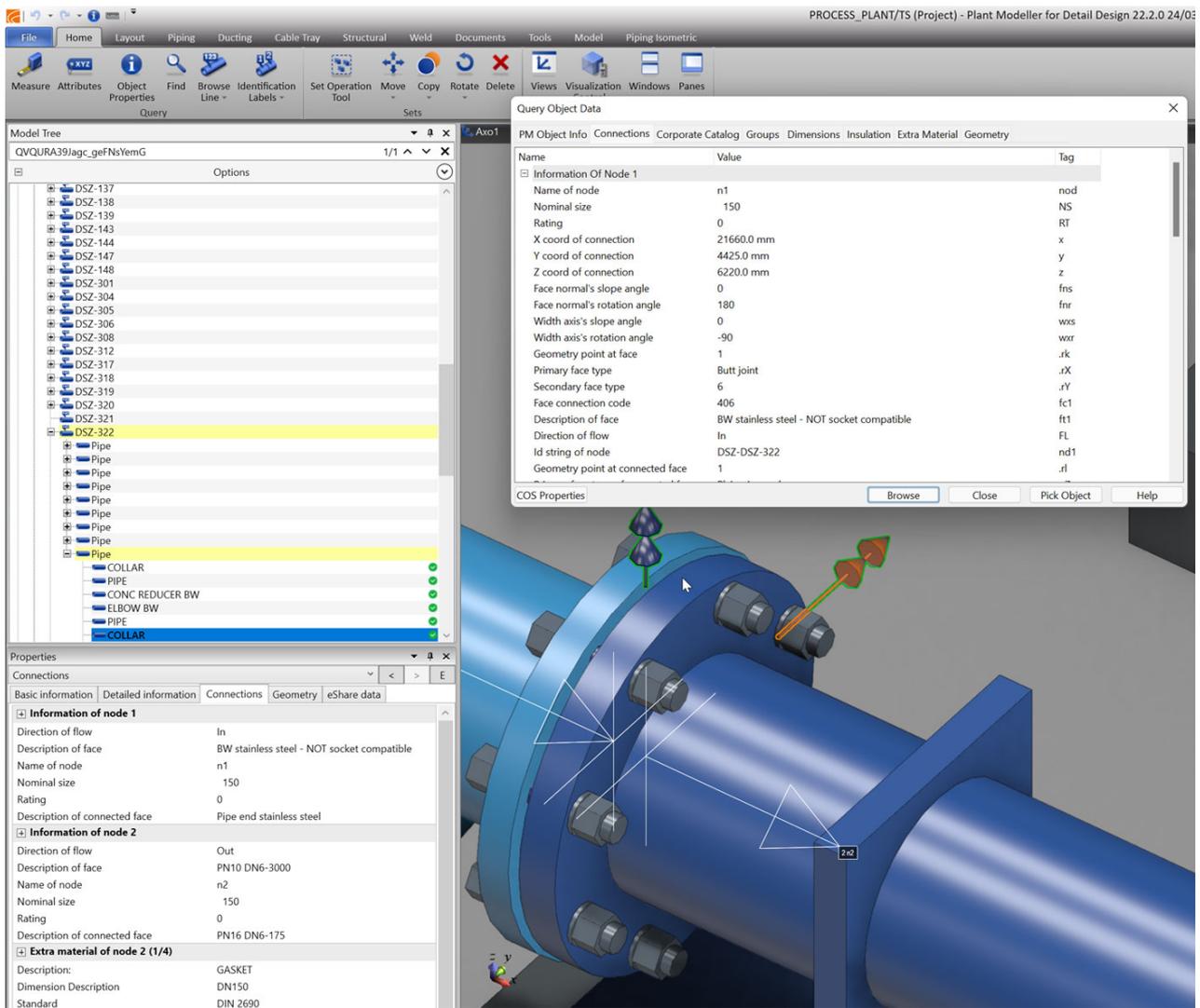
In the document editor, the **Isometric View Editor** button opens a ribbon interface for annotating the isometric drawing. In this editor, the whole drawing area is visible all the time, and 3D attachments are handled as separate drawing views.



Automatic bolt length calculation

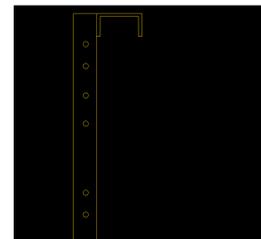
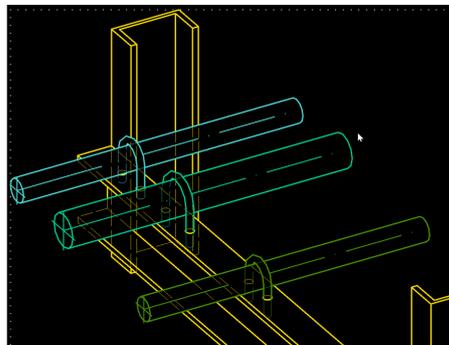
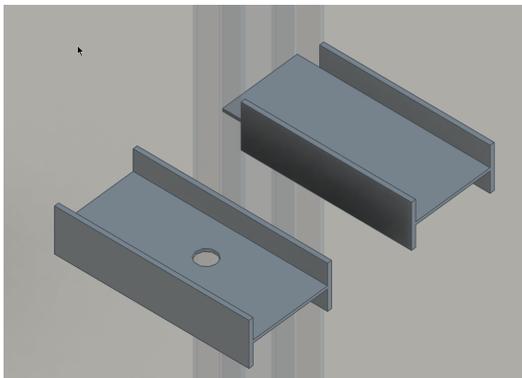
Plant Modeller can be configured to calculate bolt lengths automatically. This has the following benefits:

- All flange connections have bolts that are of optimal length.
- Easy to administrate.
- One bolt set for wafer and other flange connections that have the same pressure rating.
- Bolts, nuts, and washers are visualized.



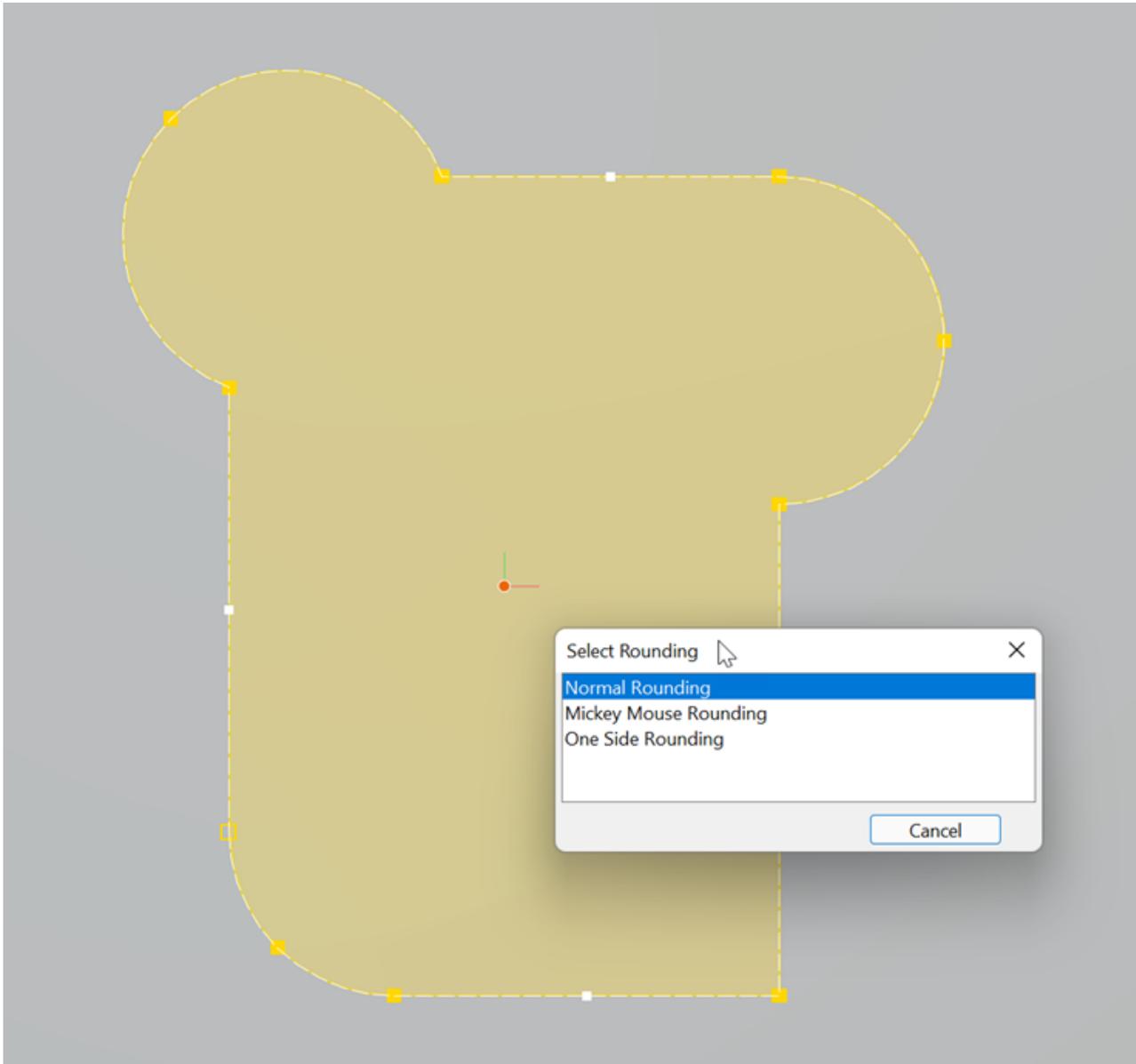
Holes into beams

Earlier it was already possible to use Boolean operations to make holes and other cuts into beams in the Component Modeller application. Now the functionality is available in Plant Modeller, too.



Improved plate editor

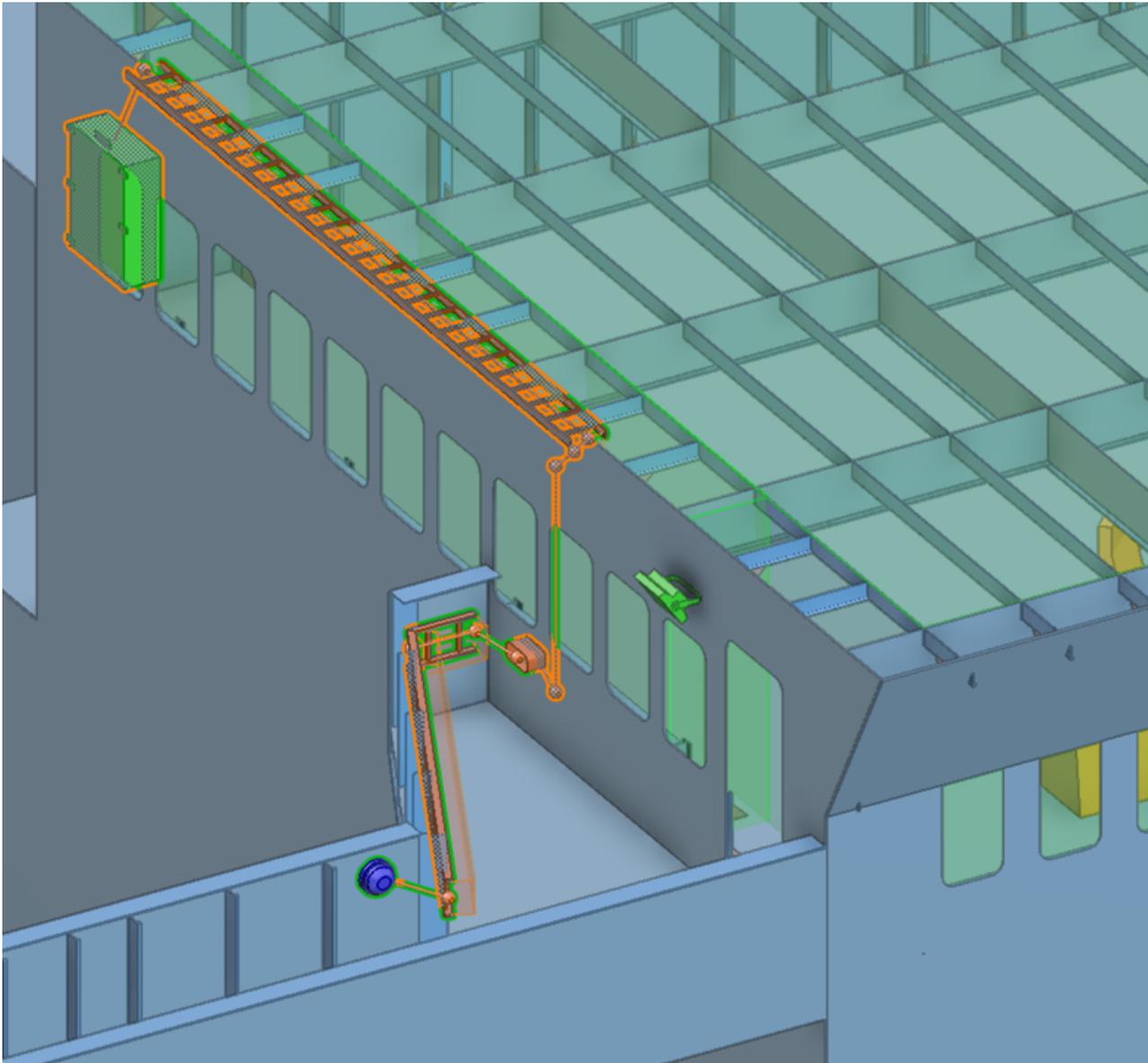
The plate editor provides three different methods for rounding the corners of the plate.



Customized colors in document export

Document export can now be configured to use a mixture of colored and black & white elements. This makes it possible, for example, to export a colored document with black & white annotations or a black & white document with a colored company logo.

Also, drawing views can now be renamed, which allows the exported documents to display more descriptive view names.



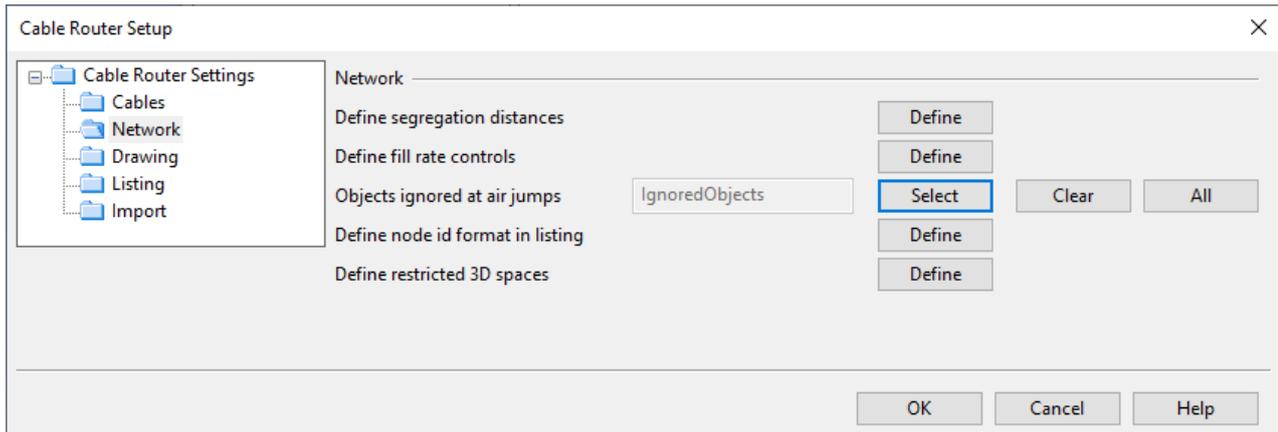
- Investigate routes also shows the direct routes between equipment and allows a new possible route to be selected directly from the Optional Routes dialog.

Index	Cost	Length	Number of nodes	Errors
1	38549.5	19381.6	8	
2	22762.5	7863.36	0	Head and tail not in same compartment.
3	80596.2	27065.4	1	Double air jump (Node 1)
4	75511.6	25370.5	1	Double air jump (Node 1)
5	80596.2	27065.4	1	Double air jump (Node 1)
6	75511.6	25370.5	1	Double air jump (Node 1)
7	34744.5	19336.6	11	No nodes found with node id from head equipment (Node 1), No nodes found with node id from ta
8	34807.6	19400.3	11	No nodes found with node id from head equipment (Node 1), No nodes found with node id from ta
9	53482.5	20109.5	10	Segment blocked (Segment 1)
10	53482.5	20109.5	10	Segment blocked (Segment 1)
11	51556.1	20108.3	11	
12	51556.1	20108.3	11	
13	52308.7	20109.5	12	Double air jump (Node 1)
14	52308.7	20109.5	12	Double air jump (Node 1)
15	64868.7	25488.7	11	Segment blocked (Segment 1)
16	64868.7	25488.7	11	Segment blocked (Segment 1)
17	61955.6	31571.5	15	Double air jump (Node 15), Double air jump (Node 6)
18	48778	31697.4	25	Double air jump (Node 6), Segment blocked (Segment 14)

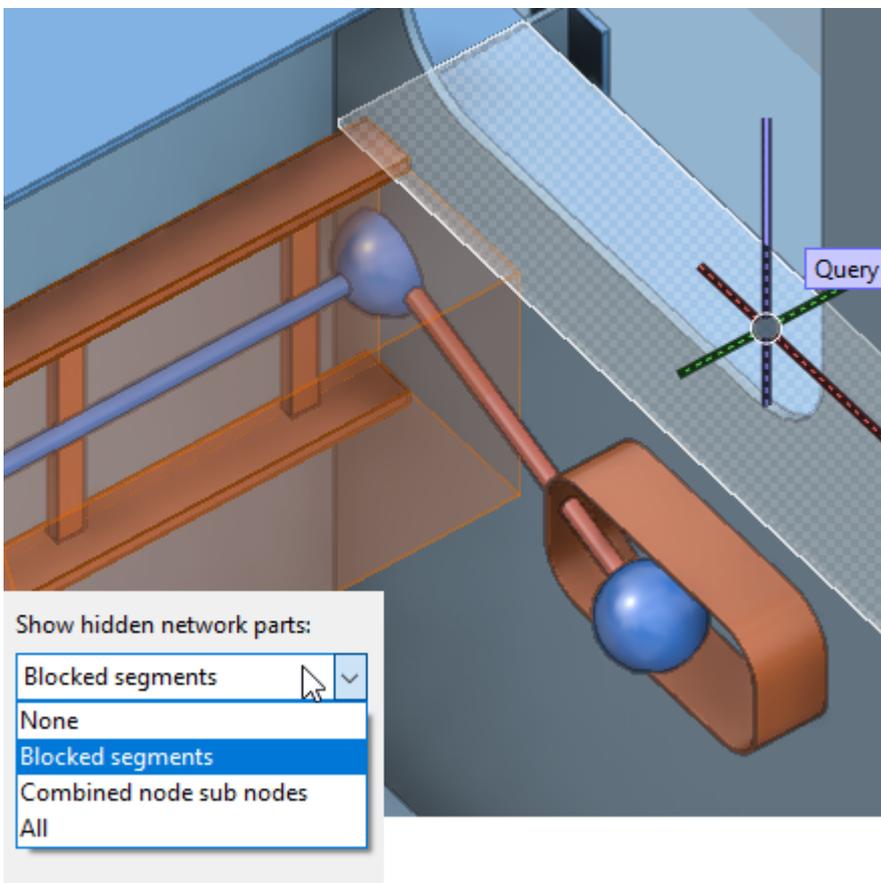
Optional routes for cable Cable2 from 721-01 to MainCRB.

Select Cancel Help

- 3D Spaces can now block cable network segments. If this is not wanted, 3D Spaces can be added to the ignored objects query of air jumps and head/tail jumps.



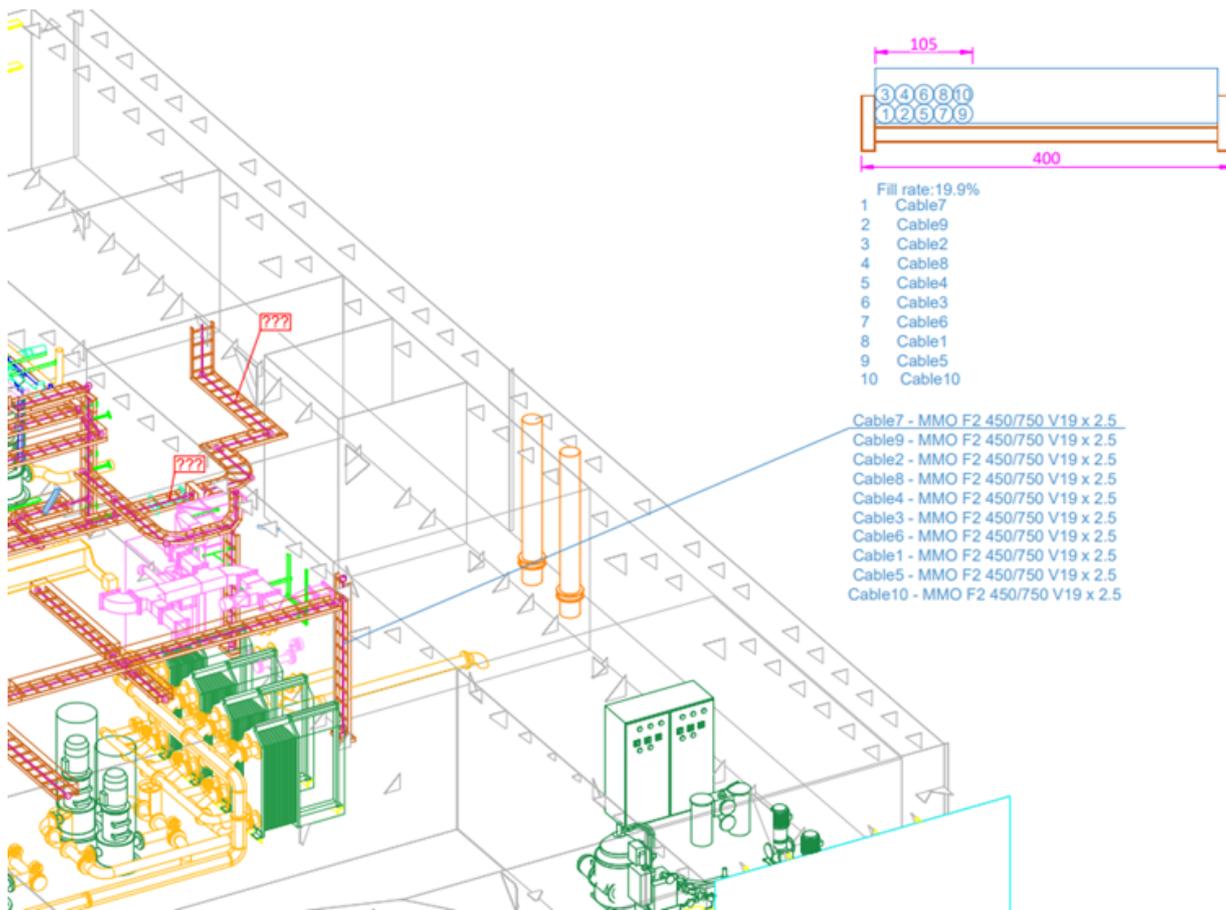
- Better visualization for blocked segments and easy to turn blocked segments into allowed, user-defined segments.



Easier document production for cable routes

Creating documents for cable routes has been improved as follows:

- Cable drawings have a new label type for showing the cables in a cable way or penetration.

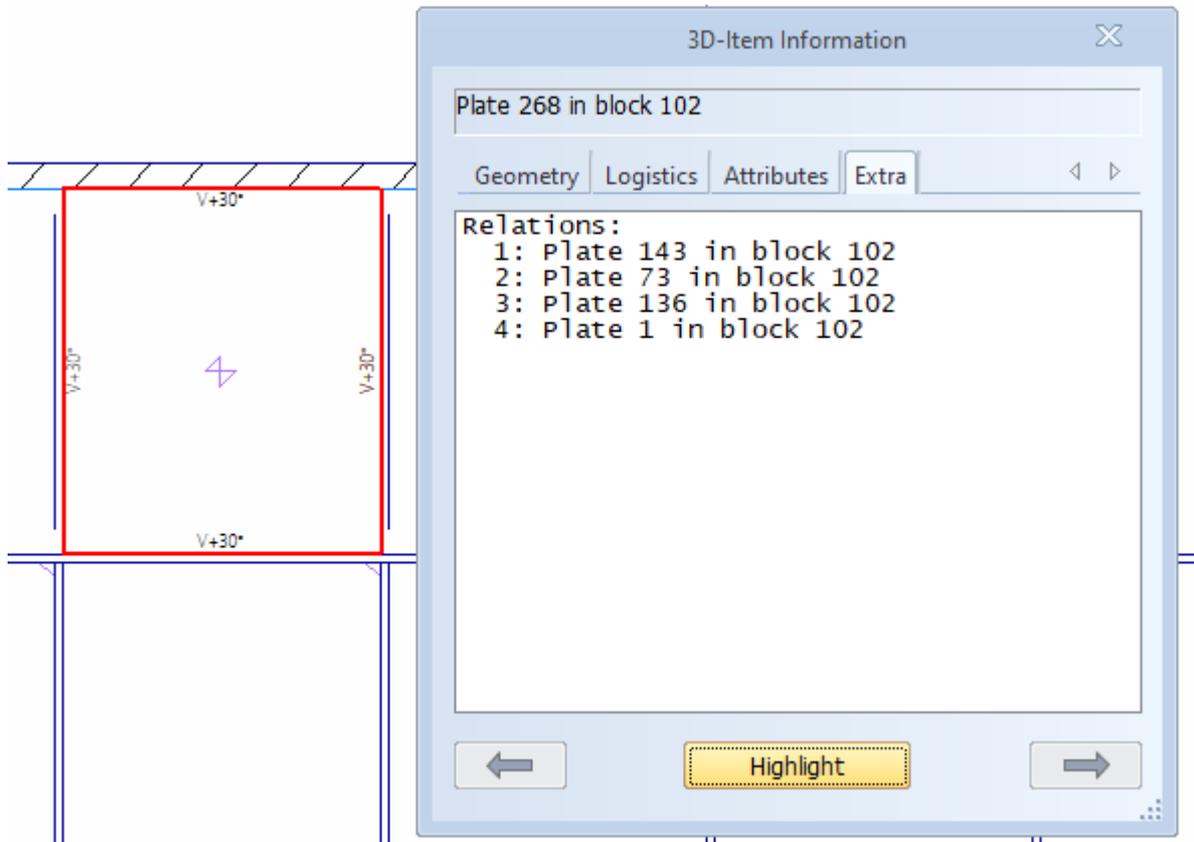


- Cable fill rate views are now generated in the document editor, not in the cable router tool.
- Improved alignment of fill rate views, using a new "CableBottom" dimension.

P&ID

New data request type for diagram listings

There is a new data request type in the diagram listing tools. This allows Excel listings to have a column that shows whether an object has already been inserted in the 3D model.



Bevels on lugs in profile cutouts

Lugs that are placed on cutouts in profiles and shell frames can have bevels now, similar to lugs on cutouts in plates. Automatic beveling of profile-to-lug connections works similar to plate-to-lug connections.

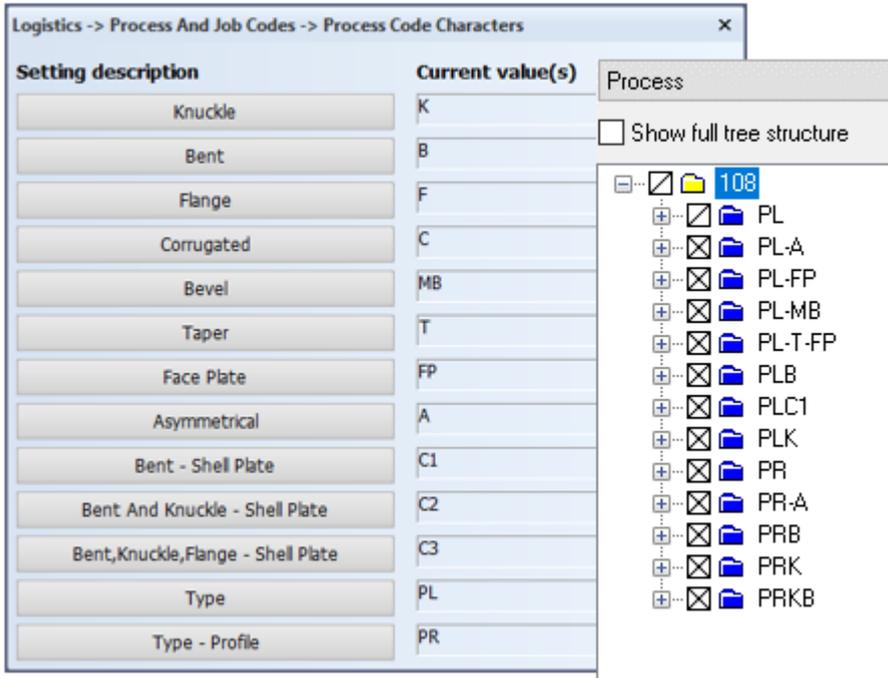
Improvements for length grids

The implementation of length grids has been improved so that they work more consistently. Frame views are now always connected to the default length grid of the active block, and short dimensions use the frame values of the default grid.

Important note: With this improvement, the system internally handles the reversed frame differently than before internally. Therefore, once you start working on an existing project in Hull 2022T2, or create a project there, you should not open that project in an older version of Hull. The reversed frame will be lost in the older Hull version, and it must be set again there.

Use characters in process and job codes in reports

There is now an option to use characters in the process and job codes for parts. This gives you more flexibility in setting up the codes, as previously only numbers could be used.



Extended topology in the exported OCX 3D model

The topology in the exported 3D model is now practically complete. The main improvement in this release is that shell plates now fully keep their topology with the hull shape. Also, several more ship attributes can be defined in the export settings.

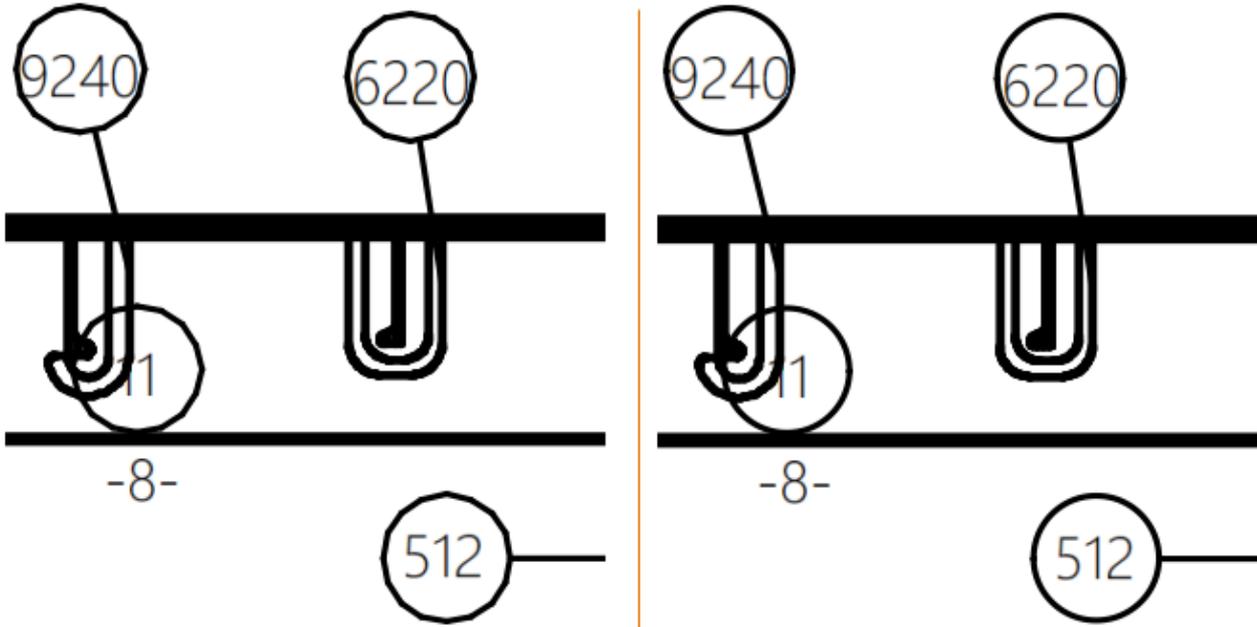
This means that for approvals it is possible to just give the classification society access to the exported OCX model instead of delivering a great number of class drawings.

Automatic size and orientation in PDF export

Each exported sheet drawing and view now keep their original size and orientation without having to make any adjustments to the default PDF export settings.

Improved Windows plotting

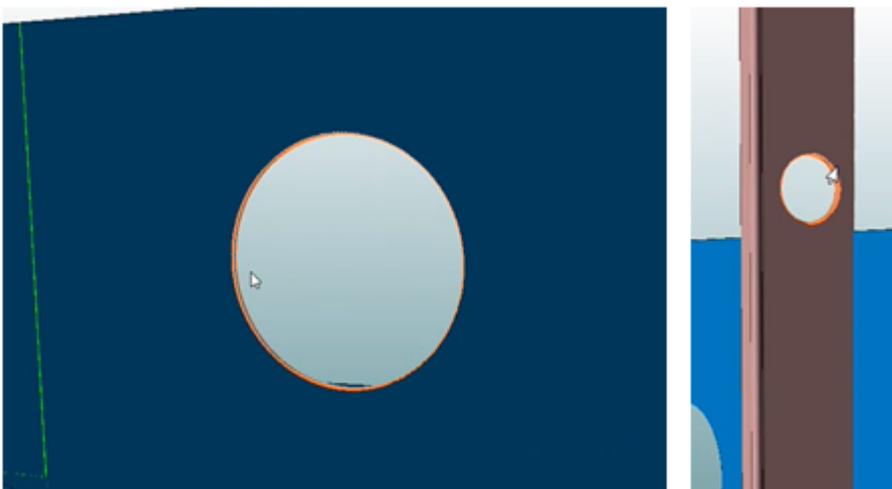
There is a new plotting method available. The new **Integrated Plotting** method is faster than the previously existing **Legacy Plotting** method, especially when plotting complex sheet drawings which contain several sub-models. Also, the accuracy of hatch patterns and arcs is improved in the new method.



The legacy method is the default method. This ensures compatibility with customer's existing plotter definition macros which use the legacy Hull Xplot and Winplot components. The new method can be taken into use in System Management.

Extended item selection and information in Hull Viewer

It is now possible to select arbitrary and standard holes, profile end types, and cutouts and corner holes in Hull Viewer. This makes it possible to get the full item information for these items also in Hull Viewer.



Note that the existing Hull Viewer models must be recreated before the new selection and item information features are enabled.

This improvement of making more objects selectable in Hull Viewer is a step towards a larger goal to eventually be able to modify construction directly in Hull Viewer.

Improvements in Hull administration

There are several improvements in managing and administrating CADMATIC Hull in distributed environments, as well as in the interoperability with CADMATIC Outfitting.

It is now possible to perform the following actions at any site in the COS network, not just the main site:

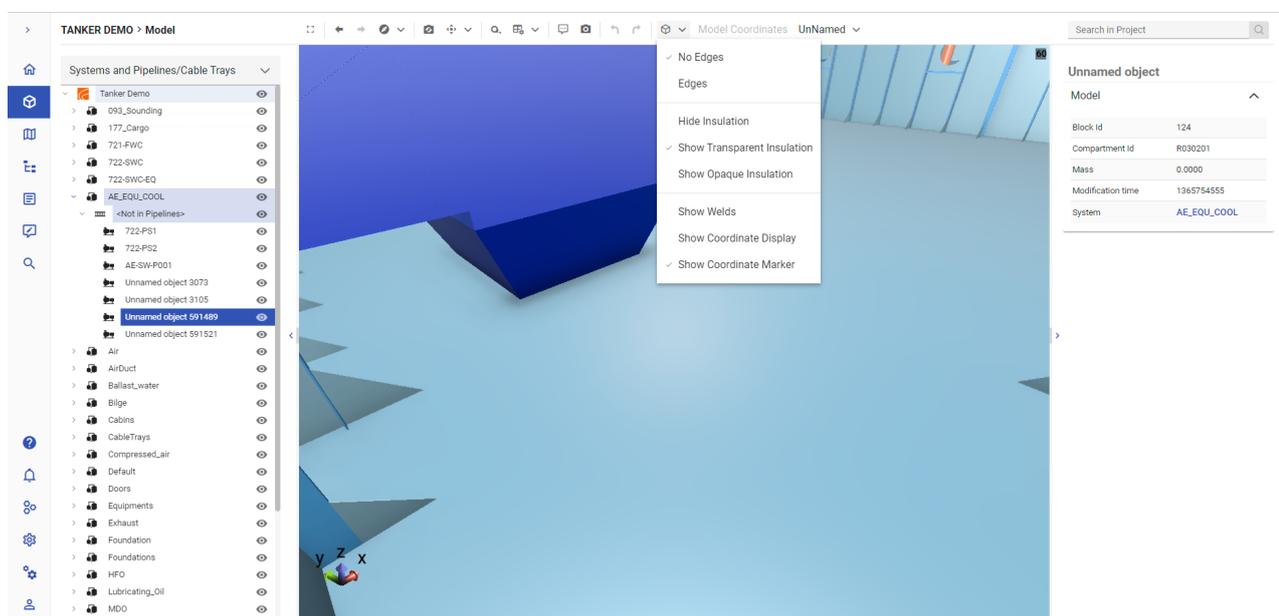
- Create pre-defined projects.
- Add Hull block data to existing CADMATIC Outfitting projects.
- Check in and check out the norms and shape databases. This makes it possible to set up and administer the norms and the shape at any site.

Information Management

Public preview of new eShare user interface

eShare user interface is going through a major overhaul, which will be implemented in a stepwise fashion. The new user interface is now available as a public preview version with limited functionality, but it will give you a chance to see it in action and get a feel for it. The new user interface is plugin-free, and we plan to support all modern browsers with it. Our aim is to have it fully ready for you in 2022T3.

Please note that eShare's administration pages are not yet migrated to the new user interface, and the admin links will open the admin pages in the "old" user interface from the "new" user interface.



Server enhancements

In addition to the more visible usability improvements, also the backend server functionality has been enhanced to enable more efficient use and offer more capabilities to users. You might notice that the file structure on the server side has been heavily restructured, and we now use .NET 6.0 for the best possible performance.

Improved data model

The data model functionalities have been improved in a number of ways. Plant Modeller can now publish groups and their attributes to EBMX models, including object-group and group-group associations. eBrowser and eShare can show the data available on the groups, group associations, and group attributes. Objects and groups now also have unique reference identifiers (GUIDs) in eShare, which can then be used to target document links, status trackings, markups, Smart Points, as well as URL API, and REST API to the items for enhanced usability and more possibilities.

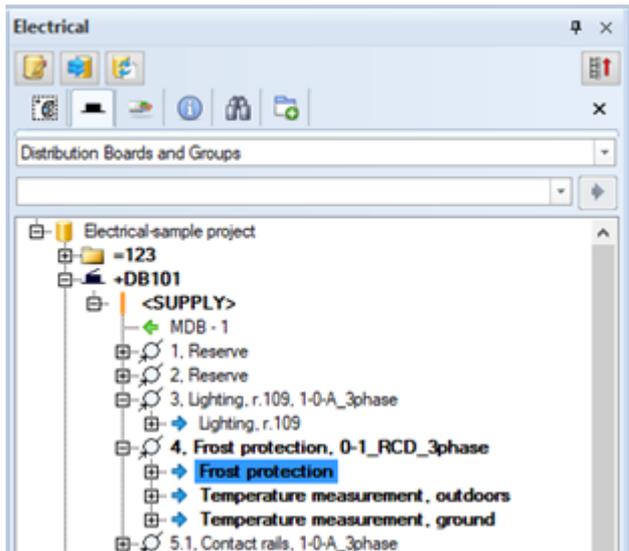
Electrical

Distribution board and group renewal

Distribution boards and groups have been renewed to offer improved user experience and the possibility to create more complex topologies. From a technical and design standpoint, this is a major change: user interfaces have been updated, and several new and updated functionalities are introduced. Therefore, it is recommended to take the new version into use gradually.

The most essential improvements and new features:

- Creating multiple feeders for a single electrical group
- Creating multiple busbars for one distribution board, with busbar information included for devices
- New and improved user interface for distribution boards and feeders
- Multiple feeders supplying one distribution board and its busbars
- New important data fields for objects



The renewal will continue after 2022T2, offering more new features and improvements in later updates!

Distribution boards

Previously, distribution boards and locations had separate user interfaces even when distribution boards acted as locations. These are now merged for easier management and data control. All required data can be entered and edited in one user interface. New data fields have also been added. Furthermore, the new interface allows you to edit busbar data, for example, which is then automatically updated to Layout and Schematics drawings.

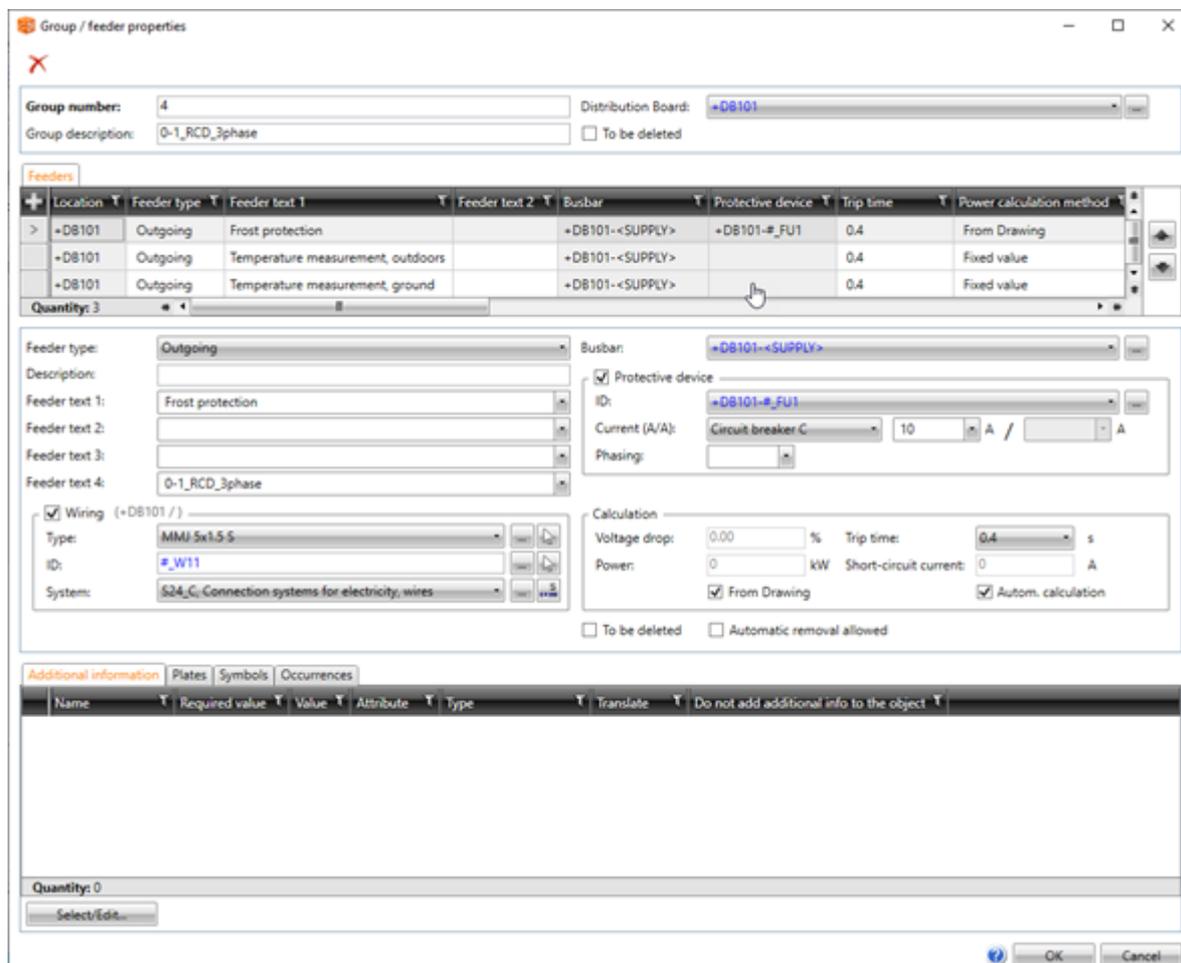
Location	Feeder type	Feeder text 1	Feeder text 2	Busbar	Protective device	Switch-off time	Power calculation method	Position description	Dist
+DB101	Outgoing	Reserve		+DB101-*	+DB101-#_FU5	0.4	From Drawing		
+DB101	Outgoing	Contact rails		+DB101-*	+DB101-#_FU22	0.4	From Drawing		
+DB101	Outgoing	Reserve		+DB101-*	+DB101-#_FU2	0.4	From Drawing		
+DB101	Outgoing	RCD		+DB101-*			From Drawing		
+DB101	Outgoing	Neon sign		+DB101-*	+DB101-#_FU18	0.4	From Drawing		
+DB101	Outgoing	Socket outlets		+DB101-*	+DB101-#_FU8	0.4	From Drawing		
+DB101	Outgoing	Control voltage		+DB101-*	+DB101-#_FU17	0.4	From Drawing		
+DB101	Outgoing	Reserve		+DB101-*	+DB101-#_FU16	0.4	From Drawing		
+DB101	Outgoing	Reserve		+DB101-*	+DB101-#_FU6	0.4	From Drawing		

Groups (electrical circuits) and feeders

One of the most essential new features is the new object type *Feeder*. One group can now have multiple feeders with their own cables and protective devices, if required. Therefore, you can have main circuits and control circuits with their own information in the same electrical group. Additionally, feeders can be created as incoming or outgoing for distribution boards.

You can utilize feeders freely; you can draw them in arrangement drawings with related objects in wiring diagrams, or you can define them in the database and include them only in reporting. You can also select which feeders are included in electrotechnical calculations and which aren't.

The new user interface enables the user to control all feeders and their cables / protective devices in a specific electrical group in one window, which makes managing feeder information easier. New objects and fields are also available in the database, enabling more convenient mass edits.



Wiring renewal

Previously, most of the different wiring functions in the Schematics application were stand-alone and there was no real support for wiring sets. Now, all wiring and cabling functions have been combined to one centralized window which allows the user to easily create and edit wire and cable objects.

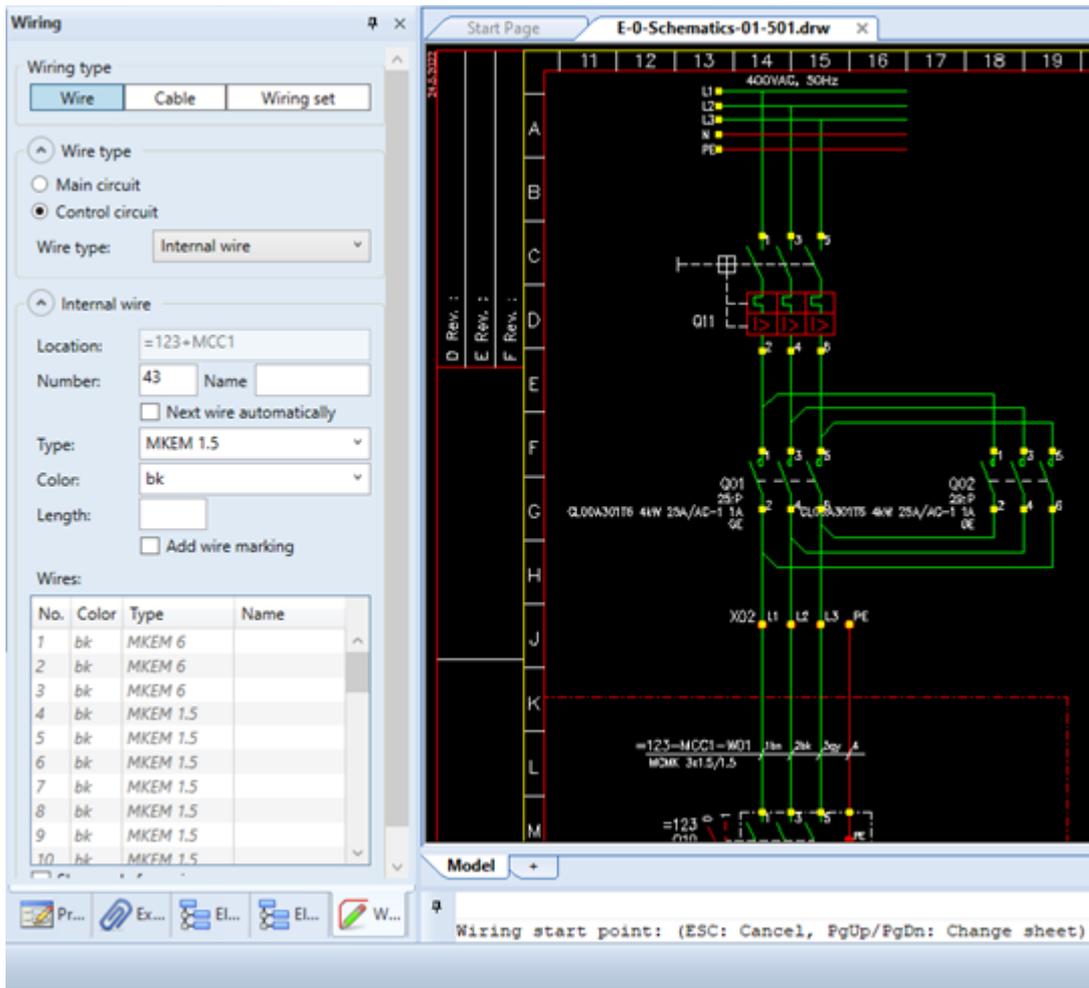
The most essential new features:

- Undefined wires, internal wires, jumper bars, wire harness wires, and cable wires can be now drawn and edited in one centralized interface.

- Wiring sets can be defined and drawn in the Schematics application.
- All required data can be given in one interface.
- Editing wiring information and wire type afterwards is smooth.
- The Wiring functions toolbar has been renewed.

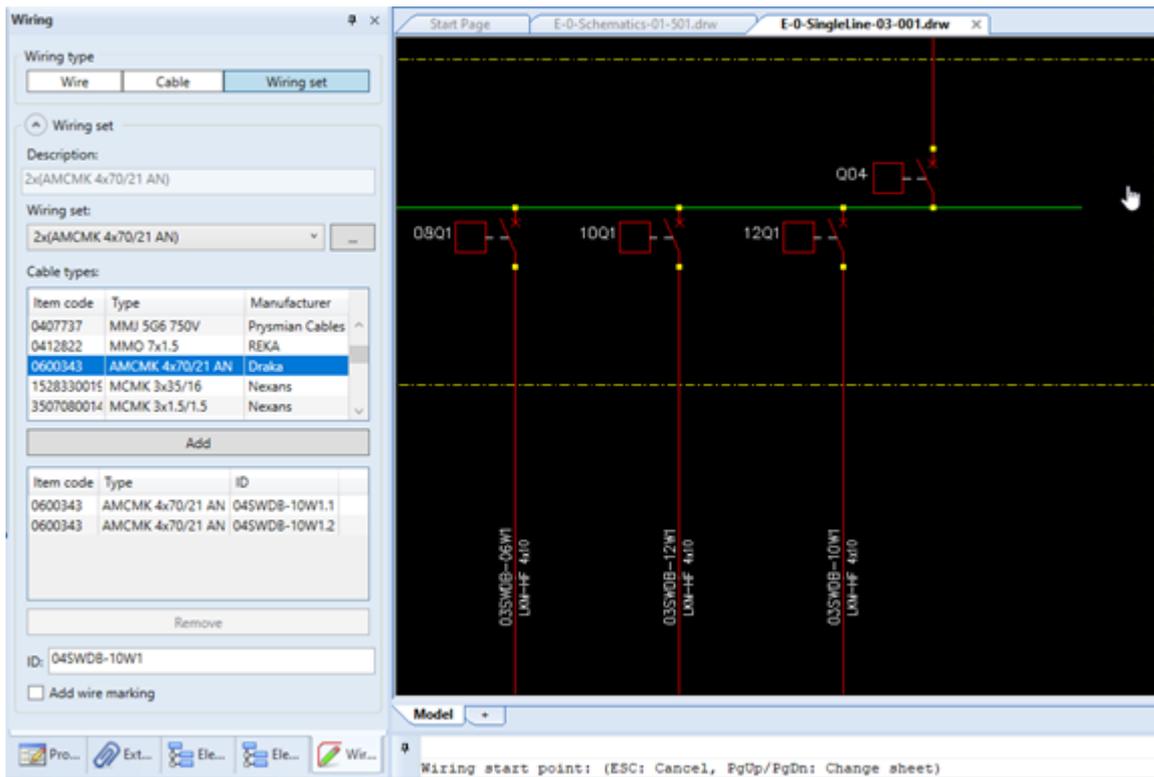
Wiring changes

The new wiring function replaces the old one with which the user was only allowed to draw undefined wires. Now the user can quickly select the wire type and enter all the necessary data. Selecting a wire from a drawing opens the same window in which the wire data or even the type can then be changed. Once changes have been made, the related wire and cable markings are automatically updated.



Wiring set improvements

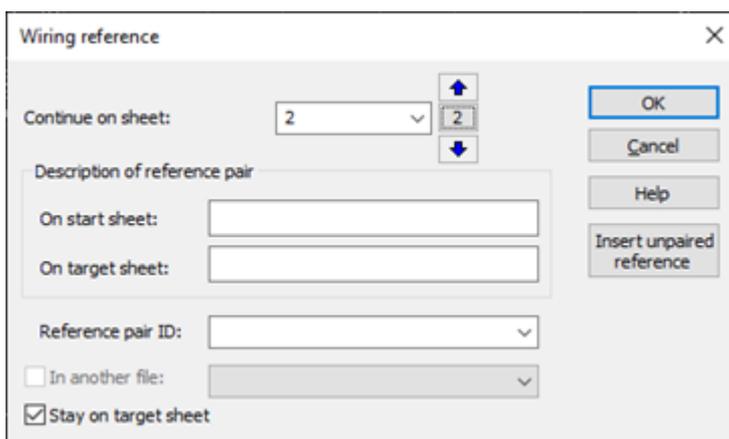
Wiring sets can be now defined and drawn in the Schematics application. Wiring sets containing different cable types can be defined either in the database, or in the new wiring interface. Additionally, sets can be edited afterwards by selecting a drawn wiring set. The user can also create a wiring set in Schematics and draw it to an arrangement drawing, for example – when cables belonging to a set are modified, changes are updated to both occurrences. Cables included in a set can be easily named with the desired IDs and edited afterwards.



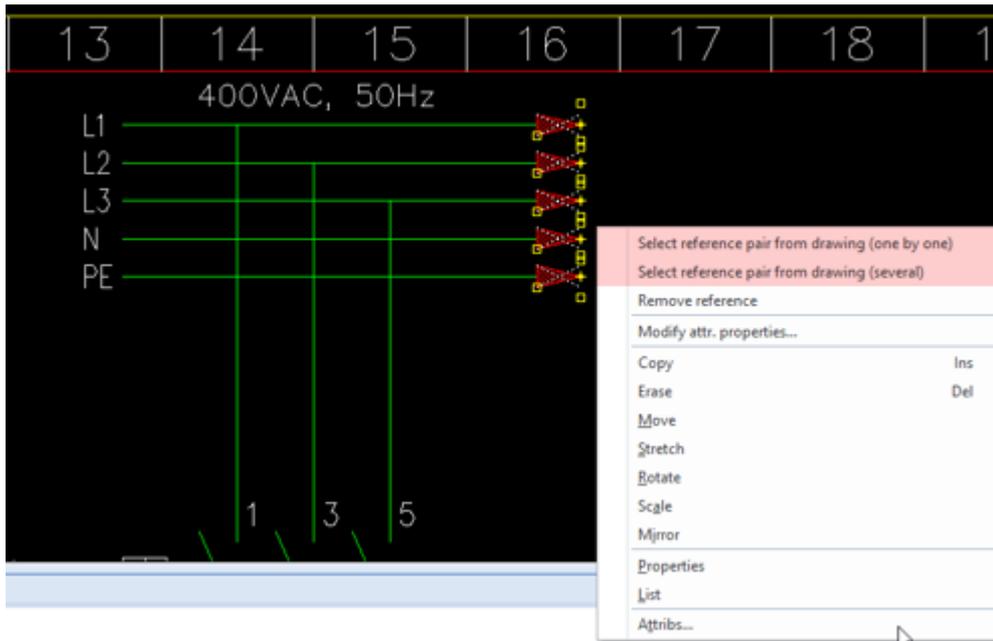
Wiring reference improvements

Wiring reference dialog and pairing

Previously, it was necessary to know the target sheet when wiring to another sheet or document. Now the user is allowed to freely browse the sheets with the arrow buttons to find the correct target sheet. Additionally, only the available sheets are now listed.

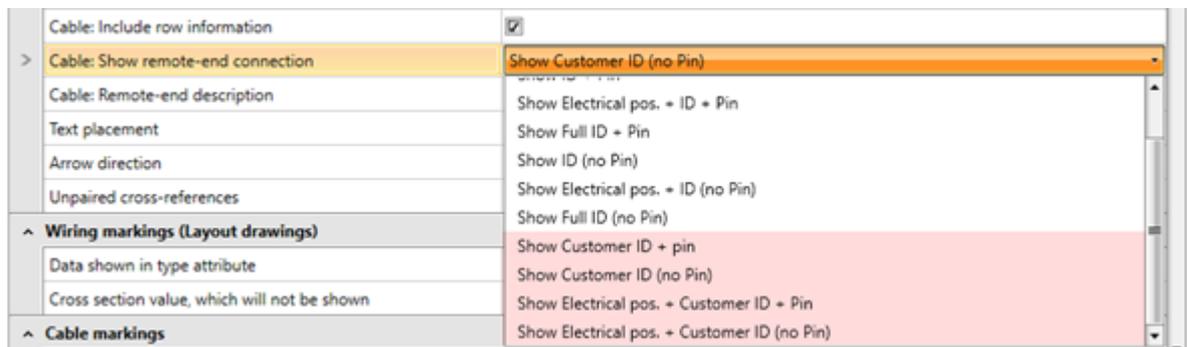


Furthermore, pairing multiple unpaired references at once was not possible, it needed to be done one by one. This has now been improved: the user is now allowed to select several unpaired wiring references and then pair them with the new functions available in the right-click menu.

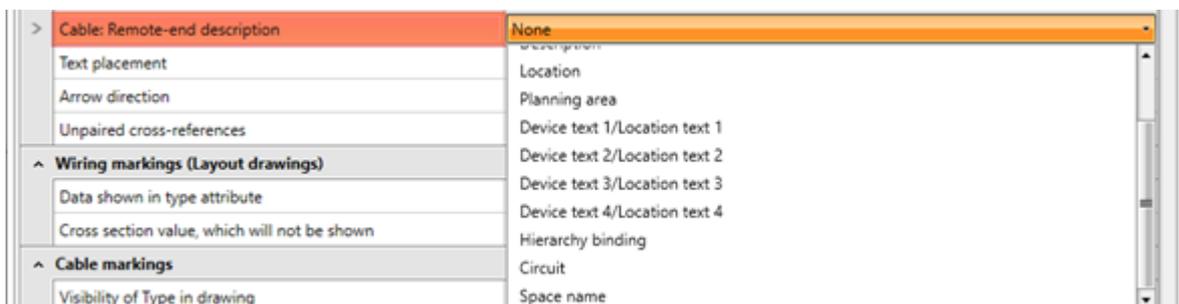


Improvements to reference format settings

In project settings, there are many options for defining what data to show for wiring references. However, customer IDs generated according to user rules could not be inserted to wiring references. Customer ID options have now been added to project settings to enable more flexible reference formatting.

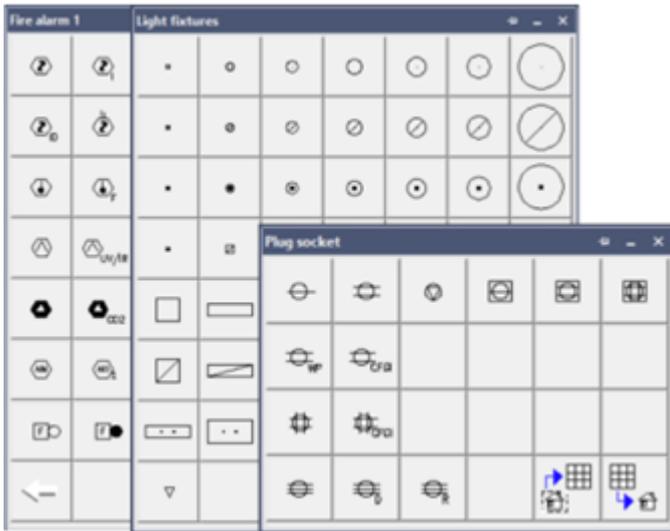


Furthermore, description texts can be added to references automatically. The data is read from the remote end object and updates automatically if the object data is changed. This adds even more flexibility to reference formatting.



Symbol library improvements

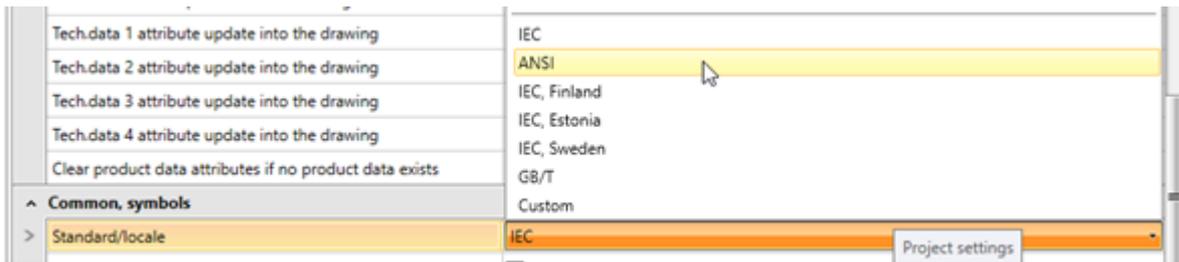
Symbol libraries have been gradually improved, and new standards have been introduced. For example, ANSI Schematics symbols were released in the previous release. In 2022T2, ANSI arrangement drawing symbols are also introduced and therefore now both wiring and arrangement documents can be designed according to ANSI symbols.



IEC symbols have also been updated, and some highly requested symbols have been added. Changes mainly affect the Schematics application, but some changes have also been done in Layout.



Additionally, GB/T (Chinese standard) and custom standard options have been added. Selecting the standard in project settings will change the symbol menus accordingly.



Draw

In CADMATIC Draw 2022T2, the usability of PDF reference drawings and the performance of the symbol clipping function (XCLIP) have been improved. A new technology makes handling of PDF reference drawings more visual and enables use of various drawing functions.

Web API

New endpoints

- New endpoints for 3D model imports
- Group information
- Part endpoints have been replaced with new ones
- Querying and attribute editing for
 - o Catalog Parts
 - o Catalog Part Sizes
 - o Equipment GDLs
 - o Structural GDLs
 - o Parametric Models

Authorization

3D Exports

- GET Get all model exports
- POST Add a model export to the queue of exports
- POST Deprecated-Use POST api/{project}/exports/{exp... to create a new export instead:
- GET Deprecated-Use GET api/{project}/exports/{exp... to get the status of an export; instead:
- GET Get an export process
- DEL Remove a queued export
- GET Deprecated-Use GET api/{project}/exports/{exp... to list all the files for the export; instead:
- GET Download a file from an export
- DEL Delete all the files stored for this export
- DEL Deprecated-Use DELETE api/{project}/exports/{exp... to delete an export process; instead:

3D Exports

Get all model exports

GET /api/{project}/exports

AUTHORIZATIONS: Bearer AND oauth2

PATH PARAMETERS

→ project string
required COS project

Responses

> 200 Returns a list of all existing export processes

— 401 Unauthorized

Add a model export to the queue of exports

POST /api/{project}/exports

Note that if using a network path, then the Web API must get the path in UNC format, since it is installed as a service. Further, the service must have been installed using a domain account, otherwise the network drive will not be available to the service. By default the exports are stored in

Complete endpoint documentation

In the Web API user manual, the endpoint documentation is now automatically generated from the API. This allows the online help to always match the latest version of the API, and integrators can easily review the endpoint documentation also when there is no access to the API itself.



Search...

- 3D Exports >
- 3D Imports >
- Authorization >
- Catalog Parts & Sizes** >
- Get all catalog parts from the given database
- Update a single, existing catalog part
- Get a single catalog part from the database
- Get sizes belonging to a catalog part
- Get all part sizes
- Get a single part size
- Update a single, existing part-size
- Get all the dimensions for a part size
- COS >
- Document >
- Equipment and Structural CDL >
- External Data for Model Objects (EDMs) >

Catalog Parts & Sizes

Get all catalog parts from the given database

GET /api/(project)/catalog-parts

AUTHORIZATIONS:

Bearer AND oauth2

PATH PARAMETERS

project string
required Target database

QUERY PARAMETERS

- Offset Integer <int32> [0..2147483647]
Index of the item from which to start pagination. If the value is larger than the actual number of items in COS, then an empty array is returned. The total number of elements, before pagination is applied, can be found from the custom HTTP response header 'X-Total-Count'.
- Limit Integer <int32> [0..2147483647]
Determines how many items should be read, starting from the offset. In case no limit is given, all items following the offset are returned. In case the limit exceeds the total number of items in COS, all items following the offset are returned
- includeProperties boolean
Flag indicating if the object's properties should be included, defaults to true. If set to false, then the properties field in the response is null.
- includeReferences boolean
Flag indicating if the object's references should be included, defaults to true. If set to false, then the references field in the response is null.
- includeAttributes boolean
Flag indicating if the object's attributes should be included, defaults to true. If set to false, then the attributes field in the response is null.

Response samples

200 404

Content type
application/json

```
[
  - {
    + "sizes": { - },
    "oid": "string",
    + "attributes": [ - ],
    + "properties": { - },
    + "referencesFrom": [ - ],
    "id": "string",
    "href": "string"
  }
]
```