



**AUCOTEC**  
Create Synergy – Connect Processes

# Engineering Base

## P&ID Freeze

03.04.2018

### **AUCOTEC AG**

Oldenburger Allee 24  
D-30659 Hannover  
Phone: +49 (0)511 61 03-0  
Fax: +49 (0)511 61 40 74

[www.aucotec.com](http://www.aucotec.com)

### **AUCOTEC, INC.**

17177 North Laurel Park Drive,  
Suite 437  
Livonia, MI 48152  
Phone: +1 (630)511 485 035600  
Fax: +1 (0)248 655 40 7800

**Copyright:** All rights, especially the right of reproduction and distribution as well as translation, are reserved. No part of this book may be reproduced, stored in retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, microfilming, recording, or otherwise, without prior permission from **AUCOTEC AG**.

**Exclusion of liability:** Texts and software have been prepared with the greatest of care. The publishers as well as the authors cannot assume any legal or other liability of any nature for potential faulty statements and their consequences, which shall apply also for the software potentially included.

**Trademarks** Engineering Base® is a registered trade mark of the AUCOTEC AG, Germany. Microsoft Office Visio®, Microsoft SQL Server and Windows® are registered trademarks of Microsoft Corporation, USA.

# Content

- 1 The Assistant P&ID Freeze ..... 1**
- 1.1 Rules for Freezing Objects ..... 5**
- 1.2 Representation of Frozen Objects in Visio ..... 7**

# 1 The Assistant P&ID Freeze

On planning plants, P&I diagrams are the key documents. After the release of these documents, both the sheets and the plant objects represented on those sheets shall be protected against changes and deletions.

By means of the **P&ID Freeze** assistant, you may release P&I diagrams and their contents for subsequent trades and protect (freeze) the plant objects and their related data.

After a freeze, new items may still be placed on the sheet, and protected items may still be moved; this can be done best via the StayConnect Mode. At frozen objects, attributes which are not protected may be edited.

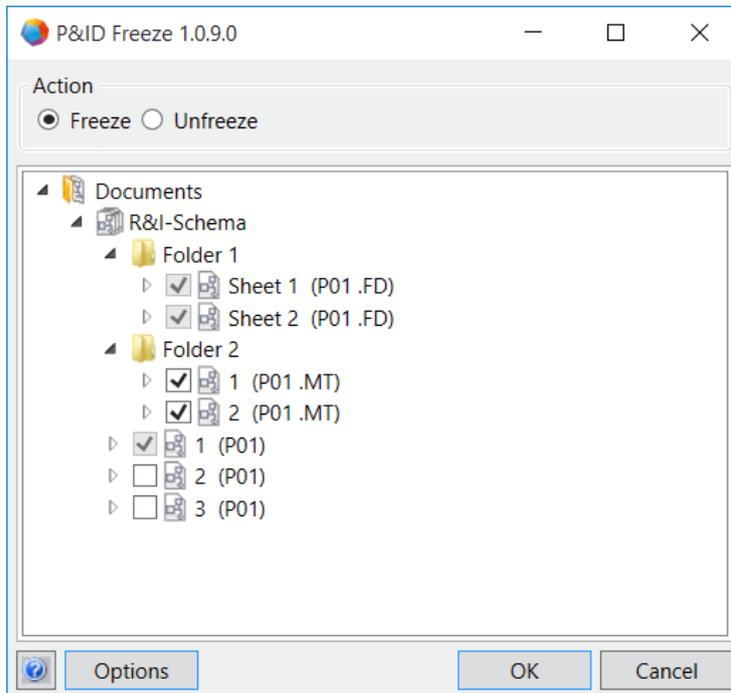
## Prerequisites for the use of this assistant

- One of the following licenses must be activated
  - EB Process Engineering(1104)
  - EB Plant Engineering (1106)
  - EB Plant Engineering (Campus) (1107)
  - EB Plant Operation (1108)
- In the **Project Properties/Access Control**, the permission **P&ID Freeze Diagram** must be checked for the user; otherwise the assistant cannot be started.
- All sheets must be closed. If this is not the case, a query will be displayed as to whether the sheets are to be saved and closed by the assistant.
- To freeze sheets, the user must have exclusive access to the sheets. If this is not the case, a message will be displayed.
- To enable the display of a P&I diagram in the assistant, **P&I Diagram** must be checked at the sheet under **Smart Diagram Types**.

### To run the assistant

1. In the **Engineering Base Explorer**, select the system folder **Documents**, a sub-folder, a drawing, or a sheet. A multiple selection is possible.
2. On the shortcut menu, click **P&ID Freeze**.

This opens the **P&ID Freeze** dialog.



In the dialog, all sheets of the smart diagram type **P&I Diagram** will be displayed together with their associated superordinate drawings and folders.

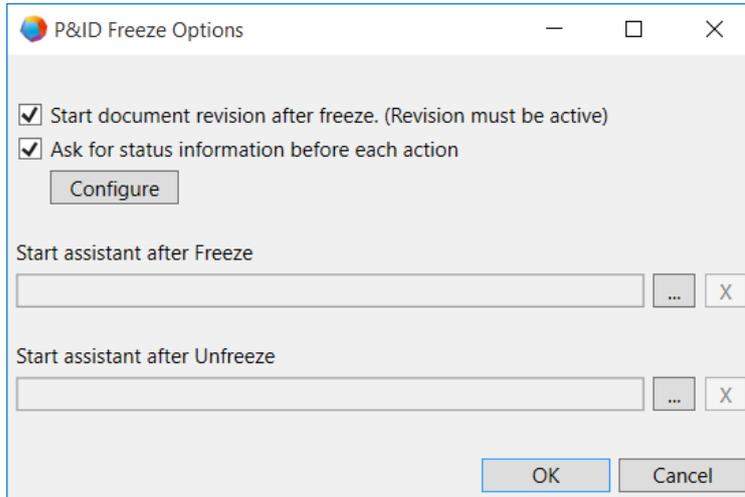
For diagrams which are already frozen, the check box is checked and marked in gray.

3. Select whether you wish to **Freeze** or **Unfreeze** the sheets.

In the **Unfreeze** dialog, all frozen sheets will be displayed with their attributes **P&ID Freeze by** and **P&ID Freeze at**.

4. Mark the sheets that are to be frozen or unfrozen.
5. Click **Options**.

This displays the **P&ID Freeze Options** dialog.



6. Select the desired options.
7. Click **OK** to freeze or unfreeze the marked sheets.

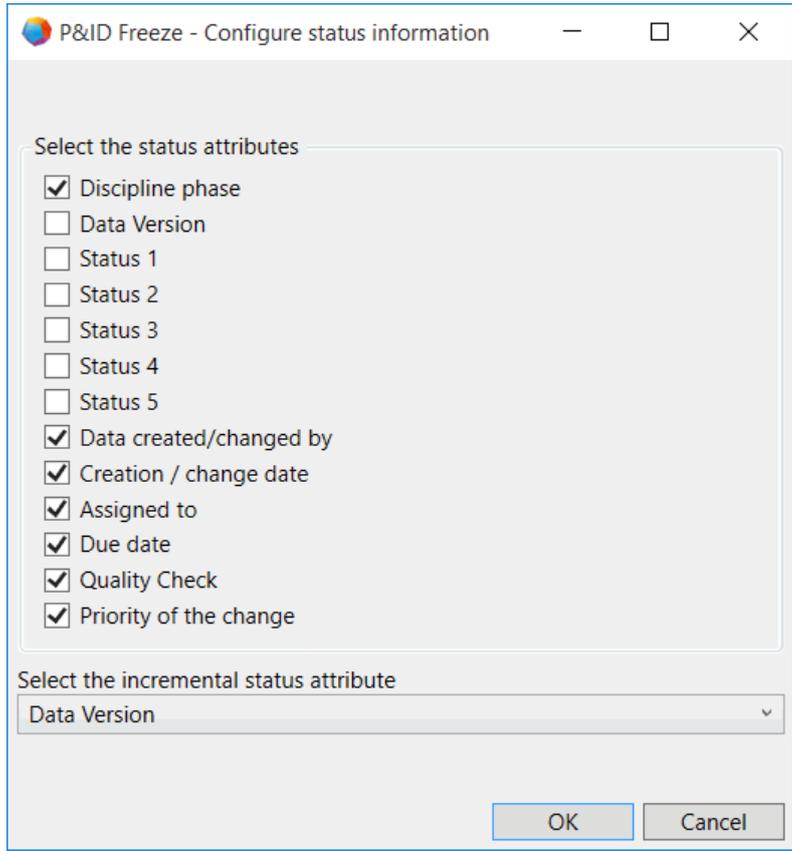
On freezing, the system attribute **Frozen by P&ID** will be set at the sheet and at the displayed objects. Attributes with contents will also receive the property **Frozen by P&ID**. These attributes will be displayed in blue.

At the sheet, the attributes **P&ID Freeze by** and **P&ID Freeze at** below the tab **Common Attributes** will be filled with the user's acronym and the current date.

On unfreezing, the check mark at the system attribute **Frozen by P&ID** will be removed. At the previously frozen attributes, the check mark at the property **Frozen by P&ID** will also be removed. The contents of the attributes **P&ID Freeze by** and **P&ID Freeze at** will be deleted.

### Options

Option	
<b>Start a Revision after the Freeze</b>	On terminating the assistant, a revision will automatically be started and the dialog <b>New Revision Assistant</b> will be displayed. The precondition for this functionality to work is that the revision management has been activated and that there already is a zero revision.
<b>Ask for status information before each action</b>	On freezing or unfreezing P&I diagrams, the status information of the sheets may be retrieved. The status attributes may be added to the displayed standard attributes by means of the <b>Define Dialog</b> . Via <b>Configure</b> , the dialog <b>P&amp;ID Freeze - Configure status information</b> will be opened.



Select the status attributes

- Discipline phase
- Data Version
- Status 1
- Status 2
- Status 3
- Status 4
- Status 5
- Data created/changed by
- Creation / change date
- Assigned to
- Due date
- Quality Check
- Priority of the change

Select the incremental status attribute

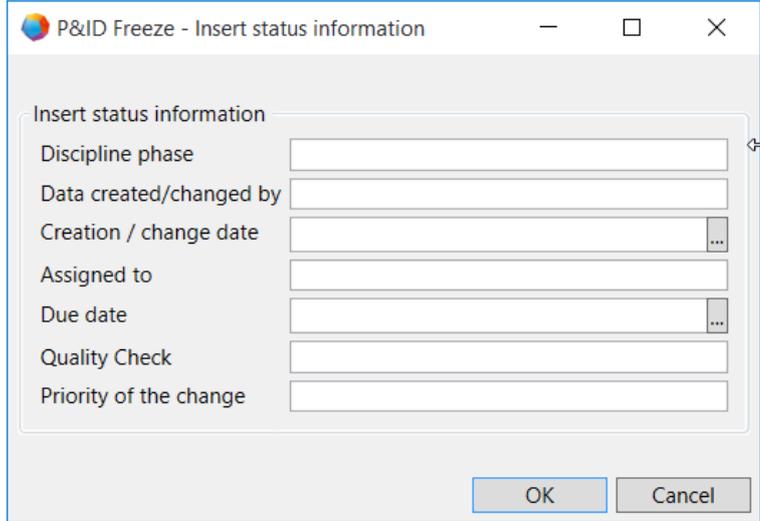
Data Version

OK Cancel

Select the status attributes of your choice.

**Incremental status attribute:** The value of this attribute will be incremented with each import. The attribute selected here must not be checked in the above-mentioned list.

If freezing or unfreezing is started via **OK**, the dialog **P&ID Freeze - Insert status information** will be opened.



Insert status information

Discipline phase

Data created/changed by

Creation / change date  ...

Assigned to

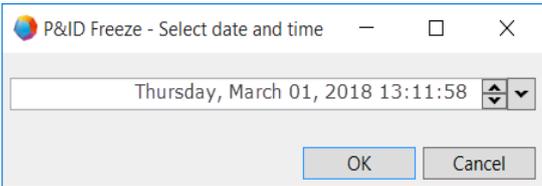
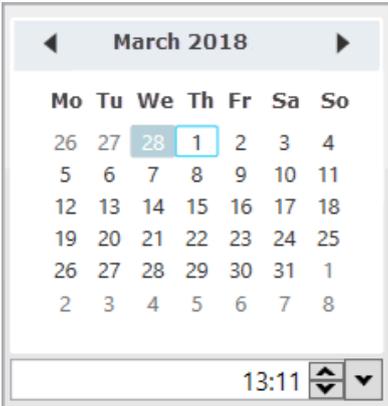
Due date  ...

Quality Check

Priority of the change

OK Cancel

You may select the **Creation / Change Date** and the **Due Date** via .

	 <p>Click  to insert the current date and time. The date may be changed using the arrow keys. The time cannot be changed here.</p> <p>Via , a monthly overview will be displayed for the selection of a date.</p>  <p>For the displayed time, the minutes may be changed via  and the hours via . Changing the time manually is also possible.</p> <p>If the option is not checked, freezing and unfreezing will be carried out without a query on the status information</p>
<p><b>Start assistant after Freeze</b></p> <p><b>Start assistant after Unfreeze</b></p>	<p>You may define whether an assistant shall be started after the freeze or unfreeze.</p> <p>Click  to open the dialog <b>Select objects [Assistants]</b>.</p> <p>From the list, select an assistant that has been specially adapted for the <b>P&amp;ID Freeze</b> functionality, and confirm your selection with <b>OK</b>.</p>

## 1.1 Rules for Freezing Objects

The following items will be frozen:

- **Boolean attributes**, either if they are set or if the property **Manual Entry** is set in the attribute properties.
- **All pins** which belong directly to a frozen device.
- **Device and flow stream states** if they are displayed directly on the sheet. However, attributes inherited from the source project will not be frozen.
- **All directly associated chemical component groups and chemical components** of a frozen **flow stream**.

- **Shapes** displayed on a frozen sheet. At the shape, the property **Frozen by P&ID** will be set.
  - After an update, a frozen shape will remain frozen.
  - Automatic pins may be created at frozen shapes.
- **Networks** (connections) with 2 connection points on the frozen sheet. In a frozen network, the following actions will not be offered in the context menu in Visio:
  - Search Potential/Substance
  - Remove Potential from all Connections
  - Remove Potential from this Connection
  - Delete Shape
  - Delete Function with associated objects

If **Remove Potential from all Connections** is started in an unfrozen network, all unfrozen connections will be deleted. For frozen connections that cannot be deleted, a message will be displayed.



On copying a frozen object, the frozen state of the object and its attributes will not be taken over.



- An object also existing on another frozen sheet cannot be unfrozen.
- A sheet may be unfrozen even if it contains objects that are still frozen.



Frozen objects may be replaced if this action does not change any frozen attributes or if the attributes at the object are empty.

#### The following items will not be frozen:

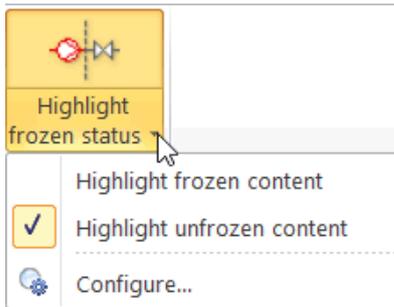
- **All attributes which are not editable (virtual attributes)** (Part Of, Associated with, etc).
- **Formula attributes**
- **Device and flow stream states** if the source object is frozen.

## 1.2 Representation of Frozen Objects in Visio

In Visio, you may highlight the frozen objects on a P&I diagram in colors.

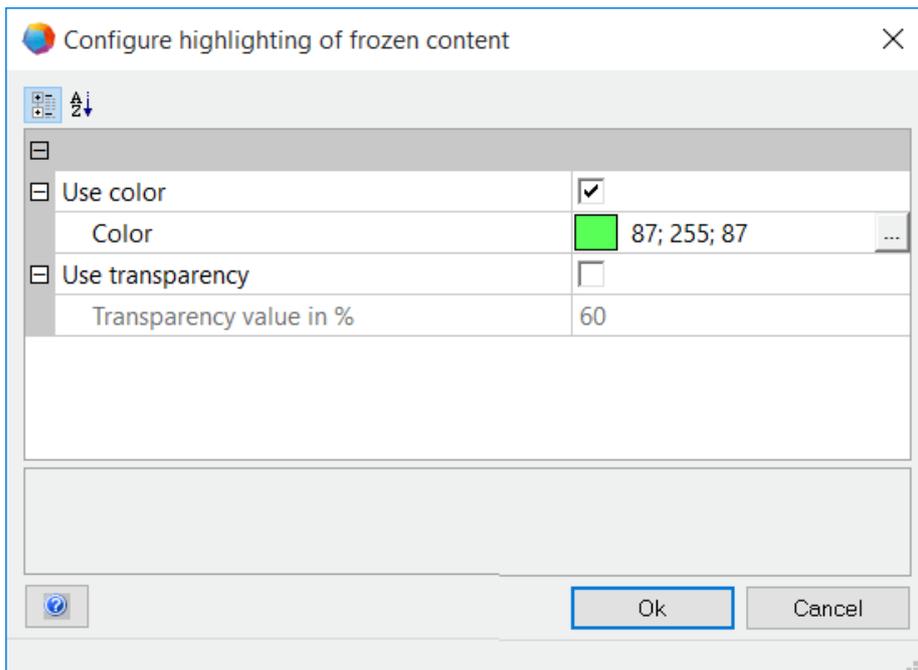
### To highlight frozen objects on the diagram in colors

1. Open the P&I diagram of your choice in Visio.
2. On the tab **EB Tools**, click the arrow  at **Highlight frozen status**.



3. In the context menu, select whether you want to mark frozen or unfrozen contents.
4. Click **Configure...** to define the color of the marking.

The dialog **Configure highlighting of frozen content** will be opened.



5. Define the color and the transparency value that are to be used to display the marked contents.

6. Click the icon  to display the markings of the unfrozen or frozen objects.