

14.0 Interacting with other Windows Applications

Pro-Designer allows you to export the drawing of a design case as well as all the data and the reports generated (see Chapter 11) so that they can be shared by other applications used frequently by engineers (such as word processors, spreadsheets, or more advanced graphic editors).

The drawing(s) can be exported in one of several different ways:

- (a) Using the clipboard (as a metafile picture)
- (b) Using the clipboard (as a “Pro-Designer” object)
- (c) Through a “wmf” (Windows Metafile Format) file, or

The reports can be created and saved in many different file formats, see Chapter 11 for more information.

Finally, the scheduling data can also be exported in a “xls” (Excel Format) file and then opened and edited directly from Excel.

Similarly, the program can receive pictures or spreadsheet fragments or anything else supported by other Windows applications that can be OLE servers (i.e., provide the necessary services that support the exporting of their documents - in total or in part - using the OLE-2 standard for information exchange between Windows applications).



14.1 Exporting Drawings (Pictures)

Pro-Designer provides an invaluable help in representing a process and evaluating several alternatives by performing “computer experiments”. Usually, an engineer will eventually have to collect the results of those experiments and put them together in some type of a report that will be submitted to his/her colleagues or supervisor. All members of the “Pro-Designer” software family allow you to integrate all the drawings you have created and the results that you have generated very easily into your reports. In this section, you will find out how you can incorporate the entire flowsheet drawing or sections of it into other programs. Depending on whether you need to copy the entire flowsheet or just a part of it, your options for exporting the corresponding picture will be different. If you just need to copy a part of the flowsheet and not the entire design case’s drawing, then please read section 14.1.1 below. If you want to export the entire design case’s pictorial description, then you may either follow the directions in 14.1.1 or you may opt to use the technique described in 14.1.2 or in 14.1.3. It all depends on what is more convenient and what constraints exist at the receiving application’s end. For most users, employing the procedure as described in 14.1.1 will be the most often used technique for drawing(s) export.

14.1.1 Exporting a Process Drawing Using the Clipboard

This would be the most often used method for sharing either the entire flowsheet or just a section of it with another application:

→ To Copy Partial or Entire Drawing Using the Clipboard...

1. Select the elements (process steps, streams and visual objects) of the design case that you wish to include in the exported picture. If the entire flowsheet needs to be copied, you may choose **Edit / Select All** in order to select all elements in the currently active design case.
2. From the **Edit** menu select **Copy** (alternatively you may simply hit **Ctrl+C** or click on the Copy button of the menu bar: )
3. Bring up the program where you want to include the drawings (e.g., MS-Word) and open the document that will receive the drawings. Go to the **Edit** menu; you have two choices:
 - a. Select **Paste** (or alternatively, hit **Ctrl+V** or **Ctrl+Ins**, or click on the paste button: )
 - b. Select **Paste Special...** from the **Edit** menu. After you have chosen **Edit/Paste Special...** the following dialog will appear:

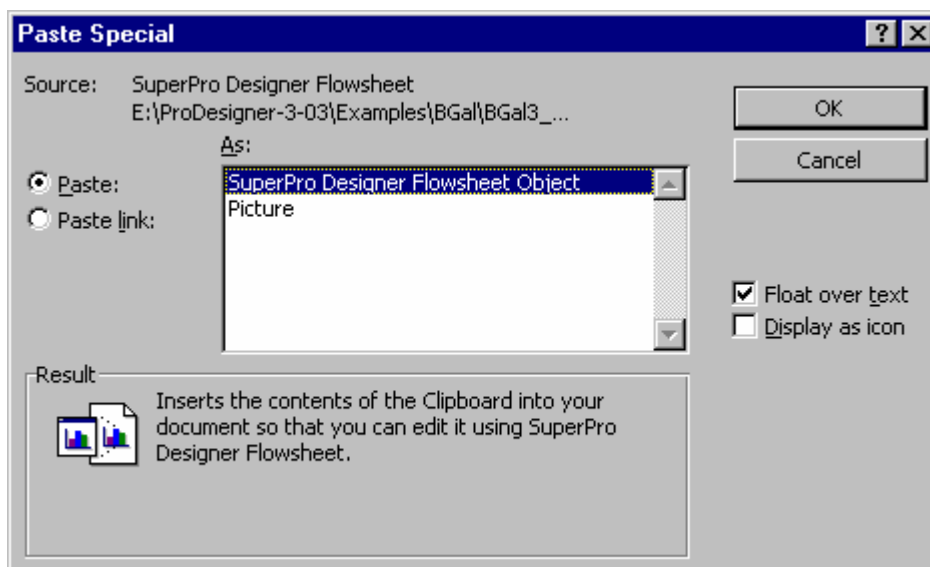


Figure 14.1: Pasting the contents of the Clipboard into another application using the **Paste Special...** option.

Notice that you have two decisions to make in this dialog. The first decision refers to the nature of the pasted object as it will continue to exist in the receiving application. Your choices are displayed in the listbox:

- (a) “xxxPro Designer Flowsheet Object”, or
- (b) “Picture”

If you select Picture, then the advantage is that most word processors will allow you to edit that picture locally, in case you need to add or remove anything from it. If you select “Pro-Designer Flowsheet Object”, then only your copy of Pro-Designer will be able to edit the contents of the pasted picture.

The second decision that you must make in this dialog is whether you wish the pasted picture to be:

(a) Pasted, or

(b) Paste-Linked

into the receiving document. There is a significant difference between options (a) or (b) above. If you choose (b), the picture will be paste-linked into the receiving document, which means that there will continue to be a 'live' connection (sometimes referred to as "hot-connection") between the receiving document and the source of the pasted image, the "Pro-Designer" design case file. If you modify the contents of the source file, then the image in the receiving document will change as well to reflect the most current version of the design case.

However, this behavior sometimes is not what you want. Instead you may want to insert a "frozen" picture of the design case as is now and not have it change later. In this case you must choose (a) (i.e., simple pasting will do fine).

- NOTES:**
- a. Choice (3.a) above is equivalent to (3.b) with decisions (a) and (a) selected from the dialog of Figure 14.1.
 - b. You can paste a selected set of "Pro-Designer" elements into a "Pro-Designer" document. The destination document could be the same document as the source or an entirely different document. When you paste a group of process steps and streams into a "Pro-Designer" document, the system will rename the pasted objects in order to avoid naming conflicts. Remember that each process step must have a unique name and the same is true for each process stream. Once the objects are pasted, you can go and edit the names of the pasted elements. All of the parameter values of the source objects are copied into the pasted objects.
 - c. If the document where a set of "Pro-Designer" objects are pasted is not the same as the source document, then the system first makes sure that all the necessary component information is carried over from the one design case to another. This is important, as it is possible that the destination design case has not defined all the components of the source design case. If that is the case, then the system automatically registers all components that are not identified in the destination design case and then it copies over the objects placed in the clipboard. Remember that the only way the system distinguishes one component from another is from its local name.



Tip

If the destination flowsheet has already defined a component under the same local name as the source flowsheet, yet the two components don't represent the same substance, any such component-related specifications (flowrates, separation factors, etc.) will incorrectly be copied over into the destination flowsheet. This is another reason why you should be very careful with the selection of component local names during component registration.

14.1.2 Exporting the Drawings as a "metafile" (.wmf) File

Most graphic as well as word processor Window applications allow you to insert in their document a picture (read from a file). By far, the most popular graphics format in the Windows world is the so-called Windows "Metafile" (wmf) format. It is very popular because it allows graphics to be saved and later pasted within a frame of a given size with minimal distortion of picture quality. Furthermore, several of the

leading word processing and graphics applications can recognize each component in a “wmf” graphic and allow you to edit the picture using their own picture editor. MS-Word, for example, has its own metafile picture editor. Therefore, you can insert a picture into MS-Word from a “wmf” file, resize it, edit it and later save it again as part of the MS-Word document. All members of the “Pro-Designer” software family allow you to export the drawing of a design case or parts of it in a file with the Windows Metafile format. Here’s how:

➔ **To Export Process Drawings as a “wmf” File...**

1. First, open (if it is not already open) the design case whose flowsheet you want to export as a “wmf” file (using **File/Open...**, or **Ctrl+O**).
2. First select the entire flowsheet (using **Edit/Select All**) or parts of it. Then, pick the **File/Export as Metafile...** option; the usual **Save As...** dialog will appear, prompting you to type the name of a file. Type in the filename that you wish to contain the description of the flowsheet in “wmf” format. By convention, all such files have a “.wmf” extension. The file need not already exist. In fact, if the program discovers that a previous file exists with the same name and in the same location on your hard disk, it will ask your permission to overwrite it.
3. After you have typed in the file name and clicked **OK**, wait a few seconds, as the program will be creating the file and writing in it the necessary metafile-formatted description of the selected items of the flowsheet. When this process is done, you can go to your favorite graphics or word processor application and import the file you have just created.

14.1.3 Exporting the Drawings in AutoCad (‘.dxf’) Format

SuperPro Designer allows you to export either the entire flowsheet, or just a set of selected unit procedure icons with streams, into a file that is compatible with AutoCAD. The picture file is in "DXF" vector format and can be opened directly by AutoCAD (or AutoCAD Lite) or other CAD and graphic programs (e.g., Visio, Corel Draw) that allow you to import this vector format (DXF).

1. Select the set of icons that you would like to include in your exported picture (if you wish to include the entire flowsheet, the first select **Edit \ Select All** to select the entire drawing).
2. Select **File \ Export to AutoCAD**.
3. Type a filename in the ensuing dialog.



Tip

When SuperPro converts the drawings to vector format, the images are converted to a set of elemental shapes (lines etc.) but it does not group them into compound objects. If you want to edit a SuperPro icon, e.g. a vessel, in AutoCAD or Visio, select and group all its graphical components.

14.1.4 Exporting the Gantt Chart

The Gantt Chart of a design case presents a pictorial overview of the scheduling constraints related with the execution of a batch. The chart itself, as a picture, can be exported either through the clipboard or through a file.

→ To Copy the Gantt Chart Using the Clipboard...

1. Bring up the Gantt Chart scheduling interface (by selecting **Tasks / Gantt Chart...** from the main menu).
2. From the **Edit** menu select **Copy** (alternatively, you may bring up the chart's context menu, by right clicking on an unoccupied area of the chart, and select **Copy**).
3. Activate the application that you would like to paste the chart picture. From the application's **Edit** menu select **Paste**. Note that **Paste Special...** and the discussion of section 14.1.1 does not apply to Gantt Charts; they can only be pasted (not paste-linked) as pictures.

→ To Export the Gantt Chart as a “wmf” File...

1. Bring up the Gantt Chart scheduling interface (by selecting **Tasks / Gantt Chart...** from the main menu).
2. From the **File** menu select **Export as Metafile** (alternatively, you may bring up the chart's context menu, by right clicking on an unoccupied area of the chart, and select **Copy**). While the desired flowsheet is displayed in a workspace window, pick the **File/Export Gantt Chart as Metafile...** option; the usual **Save As...** dialog will appear, prompting you to type the name of a file. Type in the filename that you wish to contain the description of the flowsheet in “wmf” format. By convention, all such files should have a “.wmf” extension. The file need not already exist. In fact, if the program discovers that a previous file exist with the same name and in the same location on your hard disk, it will ask your permission to overwrite it.
3. After you have typed in the file name, clicked OK, wait a few seconds, as the program will be creating the file, and writing in it the necessary metafile-formatted description of the Gantt Chart. When this process is done, you can go to your favorite graphics or word processor application and import the file you have just created.

14.2 Exporting Data and Results

In the previous sections, you saw how you can export the images associated with a design case into other programs. However, you may ask, what about the data describing the process or the reports (results) generated by the program? Can we share them with other programs? The answer is yes. In the next sections we will explore how you accomplish just that.

14.2.1 Exporting Reports

As described in Chapter 11 the reports can be created and saved in many different file formats including spreadsheets. See Chapter 11 for more information.

14.2.2 Exporting Scheduling Data to Spreadsheets

In case you need to export all the data associated with the scheduling of the process steps in your design case (start time, process time, turnaround time, etc.) the program allows you to create an “xls” (Excel formatted) file that contains all this information. Here’s how you can generate that file:

→ To Export the Scheduling Data as an “xls” (Excel) File...

1. Bring up the Gantt Chart scheduling interface (by selecting **Tasks / Gantt Chart...** from the main menu).
2. From the **File** menu select **Export Scheduling Data to Excel...** (alternatively, you may bring up the chart’s context menu, by right-clicking on an unoccupied area of the chart, and select **Export Scheduling Data to Excel...**). The usual **Save As...** dialog will appear, prompting you to type the name of a file. Type in the filename that you wish to contain the scheduling data in “xls” format. By convention, all such files should have a “.xls” extension. The file need not already exist. In fact, if the program discovers that a previous file exist with the same name and in the same location on your hard disk, it will ask your permission to overwrite it.
3. After you have typed in the file name and clicked **OK** you are ready to go to Excel and open from there the file and manipulate its contents just like any other Excel file.

14.3 Importing OLE Objects

The “Pro-Designer” family of software not only do they make it easy for you to share their pictures and data reports with other programs, but also they allow you to import foreign documents or document fragments and make them part of your design case file. Using the latest OLE technology, you can import an object copied into the clipboard from another OLE-server application (e.g., MS-Excel, Corel Draw, MS-Word, etc.). For instance, let us assume that you have been working on some side calculations with MS-Excel (related with a particular aspect of a design case) and you would like to include them next to the process step’s icon that they refer to. Here’s what you have to do:

→ To Import a Spreadsheet into the Drawing of a Design Case...

1. Go to Excel and copy the spreadsheet cells that you need to display in the flowsheet. If you don’t know how to select a range of cells from an Excel spreadsheet, please consult your Excel manual.

2. Then, bring up your copy of “Pro-Designer” software and first click with the mouse to the location around which you wish the spreadsheet to be pasted.
3. Now, select **Edit / Paste** (or **Ctrl+C**). That’s it.

NOTE: If you wish to edit the contents of the spreadsheet you have two options :

- (a) Activate Excel and edit the spreadsheet there, or
- (b) Simply double-click on the spreadsheet’s picture (as displayed in your “Pro-Designer” workspace window). Notice how the menu bar and the menu tool bar is now taken over by Excel, in order to facilitate the editing of the spreadsheet right there. When you are done editing the spreadsheet, simply click anywhere outside the spreadsheet’s bounding rectangle. You ‘re done.

If the object you wish to include as part of your design case’s description does not exist yet, instead of starting up the host application you can create it and paste it at the same time without ever leaving your “Pro-Designer” software. In this case, you will need to use the **Edit / Insert Object...** option from the main menu. When you select this option, notice how the cursor will change into the following shape:



reminding you that your next click will be interpreted by the system as the location to be used for laying down the new object. As soon as you click, you will be presented with the following dialog:

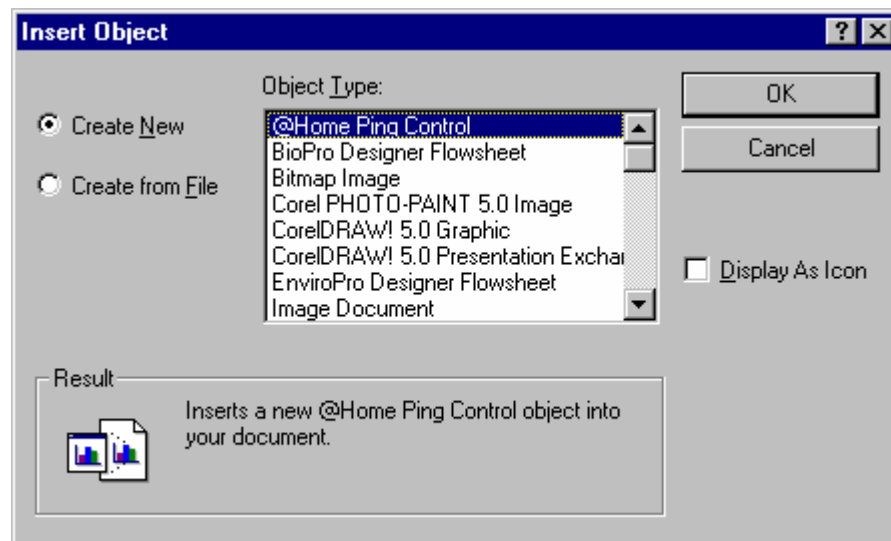


Figure 14.3: The **Insert New Object...** dialog.

The exact content of the listbox in the dialog shown above depends on what OLE servers have been installed in your environment. Once you select one of the object types listed and click OK, the main menu and toolbar will be replaced by the main menu and toolbar(s) of the server application allowing you to create and edit the object you requested. For example, if you had selected an Excel Worksheet, the menu and toolbars you will be using are those of Excel and you can essentially create a

spreadsheet from within “Pro-Designer”. When you are done, simply click outside the border margin of the newly created object. Notice then, that the main menu and toolbar return to the familiar “Pro-Designer” settings.

GO TO TOP LEVEL CONTENTS