



AVEVA

MARINE

Managing Initial Design Data User Guide

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AVEVA Initial Design - Managing Initial Design Data

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Operator's Instructions

Operator's Instructions - Managing Initial Design Data

State Description

Enter a comment in the edit box briefly describing the reason for saving the design in its current state. The description will be added to the design state history (see [Design Properties in Chapter User's Guide to Managing Initial Design Data](#)). Saved states can be restored later (see [Restoring States in Chapter User's Guide to Managing Initial Design Data](#)).

Find Files

The **Find Files** dialogue is used to search for existing designs and import them into the current project. Select the required design type from the drop down list and a folder to look in on the **Name & Location** page. The search can be refined by modification date, using the **Date Modified** page (see [Date Modified page](#)).

Click the **Find** button and any designs of the given type will be added to the list at the bottom of the dialogue. Click **Stop** to stop the search for designs. Select designs from the list and click the **Import** button to import the designs into the current project.

Name & Location page

The **Name and Location** page is used to search for designs starting from a given location. Select the design type from the drop down list and a folder to look in. The folder can be chosen by clicking the **Browse** button. Select the **Include subfolders** check box if the search is to include subfolders. Click the **Find** button and any designs of the given type will be added to the list at the bottom of the dialogue. Click **Stop** to stop the search for designs. Select designs from the list and click the **Import** button to import the designs into the current project.

Date Modified page

The **Date Modified** page is used to limit the search for designs to a range of modification dates. To limit the search, select the **Files Created of Modified Radio** button. The search can then be limited to designs:

- modified between two dates. Dates are specified in the format DD/MM/YYYY
- modified within a given number of months of today
- modified within a given number of days of today

Design in Use

The **Design in Use** dialogue is shown when the requested design is currently open. The user currently using the design is shown, together with the date the design was opened.

Click the **Read Only** button to open the design in read-only mode. In this mode, the save option is disabled and it will be necessary to save the design with a different name (Save As) if modifications are made to the design.

Click the **Override** button to override the lock on the design and open the design for writing.

Important: This is not recommended and should only be used when it is known that the user indicated in the dialogue is no longer using the design.

Click **Cancel** to abort opening the design.

Update from Design Defaults

The **Update from Design Defaults** dialogue is shown when the design defaults have been changed since the design which is being opened was last saved. Click **OK** to update the design with the new design default values. To update some items only, uncheck the items not required in the list before clicking OK. Click **Cancel** to discard all updated design defaults and preserve the values in the design.

Update Dependencies

The **Update Dependencies** dialogue is shown when dependent designs have changed since the design which is being opened was last saved. Click **OK** to re-use dependent designs. Data from dependent designs will be updated into the current design. To update specified design data, uncheck the dependencies not required in the list before clicking OK. Click **Cancel** to discard all updates.

A dependency can be removed from the **Dependencies** page of the **Design Properties** dialogue (see [Design Dependencies in Chapter User's Guide to Managing Initial Design Data](#)).

Design Defaults

The **Design Defaults** dialogue is used to enter default values which will be inherited by newly created designs. If design defaults are changed after the creation of a design, the user will be given the opportunity to update appropriate values when the design is next opened (see [Design Defaults in Chapter User's Guide to Managing Initial Design Data](#)).

Ship Details page

The **Ship Details** page contains general information about the project. These values have no direct effect on design geometry or calculations.

Particulars page

The **Particulars** page contains values relating to overall dimensions of the ship. Click the **Diagram** button to show diagrams which explain the meaning of the values. Select an edit box in the Particulars page and the appropriate dimension will be highlighted in the diagram.

Click the **Import** button to import a General Particulars file (GPF) and fill in the values (see [General Particulars File in Chapter User's Guide to Managing Initial Design Data](#)).

Parallel Midbody page

The **Parallel Midbody** page contains values used to generate a parallel midbody definition. Click the **Diagram** button to show diagrams which explain the meaning of the values. Select an edit box in the Parallel Midbody page and the appropriate dimension will be highlighted in the diagram.

Axes page

The **Axes** page contains options to control the axis system and units usage.

The **Origin** panel controls the position of the global origin (AP, FP, Midships or a specified x position (X =)).

The **Direction** panel is used to specify the positive direction for the X axes (Aft or Fwd (Forward)).

The **Positive Y** panel is used to specify the direction of positive Y values. Selecting **Port** specifies a right handed axis system and **Starboard** specifies a left handed axis system

The **Stations** panel is used to specify the station value at the aft perpendicular and the forward perpendicular.

The **X Axis**, **Y Axis** and **Z Axis** panels are used to specify the default unit system for each of the 3 axes. **Current Units** refers to the units specified in the **Units** page (see [Units page](#)).

Frames refers to the frame table specified in the **Frame Table** page. **Stations** refers to the station convention specified in the Station panel on this page.

Frame Table page

A Frame Table definition is described by a series of transitions, represented by a pair of values specifying the frame number at which the spacing begins. A frame table can be set up for the X, Y or Z axis by selecting the **Appropriate Radio** button.

The position of frame 0 is given as an offset from the origin. Frame numbering can be positive forwards or aftwards.

A simple spreadsheet is provided in the **Transitions** panel to facilitate editing, including a pop-up menu with the following options: COPY, PASTE, INSERT and DELETE. If no current transitions exist (or no transition is selected) then the pop-up will only show INSERT (adding a new transition at the beginning or end respectively).

For example the frame table definition shown in figure [Figure 1:1.: Example frame transitions and associated frame table](#) can generate the frame table shown to the right

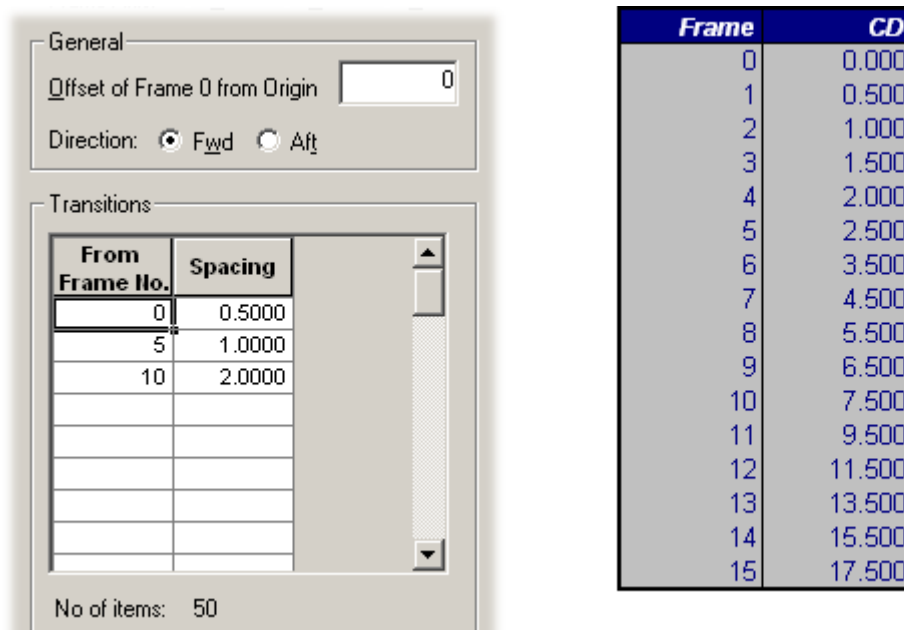


Figure 1:1. Example frame transitions and associated frame table

Units page

The **Units** page is used to set the units used when the Axis system set in the **Axes** page is set to **Current Units** (see [Axes page](#)).

Faceter page

The **Faceter** page is provided to specify default values for faceting surface patches (for graphical rendering, property calculations, etc). There are 4 levels:

- Low - Low accuracy, but fast.
- Recommended - This provides the best accuracy/speed trade-off.
- High - High accuracy, but can be slow for complex designs
- Custom - Individual faceter values can be set. These are
 - Min Subdivision Level (≥ 0) and Max Subdivision Level (≥ 0) - Specify to what extent the basic faceting grid may be subdivided.
 - Surface Tolerance (> 0) - The gap between an approximating facet and the true mathematical surface. This value is entered in metres.
 - Normal Tolerance (≥ 0) - Defines the maximum angle between the surface normals at the vertices of an individual facet. This is the most sensitive (and thus generally the governing) parameter and should be used with care to avoid the generation of excessive numbers of facets. For most of the models values in range of 10-30 are sufficient.
 - Aspect Ratio (≥ 1) - Controls triangular facets, ensuring the ratio of height over base width does not exceed the value entered.
 - No. of Increments ($\geq 4, \leq 30$) - The number of subdivisions for a NURBS surface if fixed-grid faceting is used.









AVEVA Initial Design Project Tool













The **Initial Design Project Tool** provides the following functions:

- Management of Initial Design Standalone projects (see [Project setup for Initial Design in Chapter User's Guide to Managing Initial Design Data](#)).
- Management of designs within the Product Information Model (PIM) or within standalone projects (see [Managing Designs in Chapter User's Guide to Managing Initial Design Data](#)).

Menu Commands

The following operations are available from the menu and toolbar. Most of the functions are also available from popup menus on the project tree and design list activated by clicking the right mouse button.

PROJECT \ NEW		Create a new standalone project below the current group
PROJECT \ REGISTER		Register an existing project and add it below the current group. Use this option when you want to use and share a project created by another user.
PROJECT \ SELECT		Make the selected project the current one.
PROJECT \ UNREGISTER		Unregister a project. This will remove the project from the tree, but will not remove the project folder or the designs within it.
PROJECT \ EXPORT		Export the currently selected project. This will create an Initial Design export file which can be delivered to a remote site and imported into another project (see Transfer of data to Structural Design and Hull in Chapter User's Guide to Managing Initial Design Data).
PROJECT \ IMPORT		Import an Initial Design export file into the currently select project (see Transfer of data to Structural Design and Hull in Chapter User's Guide to Managing Initial Design Data).
PROJECT \ EXIT		Exit the project tool
GROUP \ NEW		Create a new project group below the current one
GROUP \ DELETE		Delete the selected project group. All projects within that group will be unregistered. The project folders and designs within them will not be removed

DESIGN \ IMPORT		Import an existing design (from a previous version or from another project, for example) into the current project
DESIGN \ EXPORT		Export a design from the current project.
DESIGN \ DEFAULTS		Edit design defaults (see Design Defaults in Chapter User's Guide to Managing Initial Design Data)
DESIGN \ OPEN		Open the selected design with the appropriate application process.
DESIGN \ COPY		Copy the selected design and design history.
DESIGN \ DELETE		Delete the selected designs and design histories.
DESIGN \ RENAME		Rename the selected design and design history.
DESIGN \ RELEASE		Release data for use in downstream processes. For a Lines design, all hull form definitions are released for use with Surface/Compartment, Hull and Structural Design. They are also written to the Initial Design databank, if available, for visualisation in Design Manager. For a Surface/Compartment design, all surfaces, envelopes, curves, internal surfaces and compartments marked for design are released.
DESIGN \ PROPERTIES		Show properties of the selected design (see Design Properties in Chapter User's Guide to Managing Initial Design Data).
DESIGN \ UNLOCK		Unlock the selected design.
EDIT \ USER ALIAS		Set an alias for the user's computer network login.
VIEW		Change format of the list view. This provides the same options as the Views option of the list box popup menu (see Figure 1:15.: Large Icon view , Figure 1:16.: Details View , Figure 1:17.: Small Icons view , and Figure 1:18.: List View in Chapter User's Guide to Managing Initial Design Data)
VIEW \ REFRESH		Refresh the design list

VIEW \ STATUS BAR

Show or hide the status bar

VIEW \ TOOLBARS



Show or hide the toolbars

Project Tree


AVEVA Initial Design can be used within the full Product Information (PIM) environment or standalone (see [Project setup for Initial Design in Chapter User's Guide to Managing Initial Design Data](#)).

If the **Stand-alone** checkbox is selected then Initial Design is used standalone and the Project Tree is used to manage the standalone projects.


If the **Stand-alone** checkbox is not selected then Initial Design is used within the full PIM environment. In this case, the Project Tree is disabled, as project setup and selection is managed using the usual AVEVA Marine tools. The Design List will show designs contained in the currently selected AVEVA Marine Project.

If the **Stand-alone** button is disabled, then there is no available PIM or the SB_NAVARCH environment variable is not set, in which case, standalone projects are enabled.

The project tree is used to manage standalone Initial Design projects. Projects are organised in project groups. To create a project group, select the main Project node in the

tree or an existing group node and click the **New Project Group** button, . To create a project, select the main Project node or an existing group and click the **New Project** button,



. To make a project active (that is, the project with which Initial Design modules will work on), select the project in the tree and click the **Select Project** button, .

Design List

The design list shows designs in the current project. If the **Stand-alone** button is checked, then the design list shows designs for the last project selected in the tree. If the **Stand-alone** button is not checked, the design list shows designs stored in the currently selected PIM.

In **Details** view, basic properties are shown for each design (type of the design, modification date, user who last modified the design, person who is using the design, if any, description). Columns can be hidden/shown by clicking the right mouse button over a column header and checking/unchecking the appropriate column title. The list can be sorted by any column by clicking the left mouse button on a column header. The list will toggle between ascending/descending sort.

Operations on one or more designs can be carried out by selecting them in the list and clicking the right mouse button or clicking the **Appropriate Toolbar** button. A popup menu is shown with the following options:

OPEN








Open the selected design with the appropriate application process.

COPY



Copy the selected design and design history.

DELETE		Delete the selected designs and design histories.
RENAME		Rename the selected design and design history.
RELEASE		Release data for use in downstream processes. For a Lines design, all hull form definitions are released for use with Surface/Compartment, Hull and Structural Design. They are also written to the Initial Design databank, if available, for visualisation in Design Manager. For a Surface/Compartment design, all surfaces, envelopes, curves, internal surfaces and compartments marked for design are released.
PROPERTIES		Show properties of the selected design (see Design Properties in Chapter User's Guide to Managing Initial Design Data).
UNLOCK		Unlock the selected design.
VIEW \ LARGE ICONS		View design list with large icons.
VIEW \ DETAILS		View design list with details.
VIEW \ SMALL ICONS		View design list with small icons.
VIEW \ LIST		View design list in list format, with no details.
VIEW \ REFRESH		Refresh design list

Note: Designs can only be opened or released if the project in view is the currently selected project.

Export Project

The **Export Project** dialogue exports the project to a 'Initial Design export' file (with extension 'tidexp'). This file can then be delivered to a remote site and imported (see [Transfer of data to Structural Design and Hull in Chapter User's Guide to Managing Initial Design Data](#)).

Export option

- **Entire project** - Export all designs, histories, states and data files (contents of the 'dat' folder, see [Input and output data in Chapter User's Guide to Managing Initial Design Data](#)).
- **Registered designs** - Export all registered designs and histories (previous design states, designs not shown when the 'Display Registered Designs Only' checkbox is selected and other data files are not included).
- **Selected design** - Export designs (and associated histories) selected in the Design List.

Comments

Add any extra information or instructions which is useful when importing the project. The comments are shown during the import operation.

Import Project

The **Import Project** imports the contents of an Initial Design export file into the currently selected project.

Comments

Any extra information or instructions provided during the export operation are shown here.

New/Register Project

The **New** or **Register Project** dialogue facilitates the creation of a new Initial Design standalone project or the registering of an existing project (for example, a project created by another user residing on a project server computer).

Enter a name for the project and a folder where project files will be stored. Use the **Browse** button to browse for a folder. If registering an existing project, select the project folder where the project files are stored.

If creating a project for existing design from older versions of AVEVA Marine, select the folder where those design files exist and check the **Register Designs** checkbox. This will register old designs for use with AVEVA Marine.

User Alias

The **User Alias** dialogue allows users to provide an alias to their computer network login user name. Sometimes a computer login name may not be easily recognisable to other AVEVA Marine users. Whenever a project is accessed, other users will see the alias rather than the computer login name.

New Design

The **New Design** dialogue facilitates the creation of a new design within the current AVEVA Marine project. Enter the name of the new design in the **New Design** edit box, a description for the design in the **Description** edit box and click **New**.

Existing designs pertinent to the current design process are shown in the **Design list**. Certain operations can be carried out on these designs by selecting them and clicking the right mouse button (see [Design List](#)).

Certain designs may be present within the current project (for example, additional offset data), which clutter up the **Design list**. These can be removed from the list by checking the **Display Registered Designs Only** box.

Open Design

The **Open Design** dialogue facilitates the opening of a design from the current project. Select the design from the design list and click **Open**.

An existing design (from a previous version or from another project, for example) can be imported into the current project. If the location of the design is known, click the **Import** button and locate the design. If the location is not known, click the **Find** button and use the **Find Files** dialogue to locate a design to import.

Existing designs pertinent to the current design process are shown in the **Design list**. Certain operations can be carried out on these designs by selecting them and clicking the right mouse button (see [Design List](#)).

Certain designs may be present within the current project (for example, additional offset data), which clutter up the **Design list**. These can be removed from the list by checking the **Display Registered Designs Only** box.

Save Design

The **Save Design** dialogue facilitates the saving of a design with a different name. Enter the new name in the **Save Design** edit box and click **Save**.

Existing designs pertinent to the current design process are shown in the Design list. Certain operations can be carried out on these designs by selecting them and clicking the right mouse button (see [Design List](#)).

Certain designs may be present within the current project (for example, additional offset data), which clutter up the **Design list**. These can be removed from the list by checking the **Display Registered Designs Only** box.

Use Design

The **Use Design** dialogue facilitates the use of design data in the current design. The current design will then become dependent on the selected design. Select the design to use from the design list and click **Open**.

An existing design (from a previous version or from another project, for example) can be imported into the current project. If the location of the design is known, click the **Import** button and locate the design. If the location is not known, click the **Find** button and use the **Find Files** dialogue to locate a design to import.

Existing designs pertinent to the current design process are shown in the **Design list**. Certain operations can be carried out on these designs by selecting them and clicking the right mouse button (see [Design List](#)).

Certain designs may be present within the current project (for example, additional offset data), which clutter up the **Design list**. These can be removed from the list by checking the **Display Registered Designs Only** box.

For additional options used with Offset Data, see [Offset Data Options](#).

Offset Data Options

Select the **Sparse** method and the following options are enabled:

- Select the **Reflect Body** option if a closed hull is required.
- Select the **Use Quadrilaterals** option to generate quadrilaterals where appropriate, if not selected only triangular facets will be used.
- Select the **Reduce Edges** option to reduce unnecessary edges between faces.

Select the **Skin** method for the more primitive skinning functionality.

Design Properties

The **Design Properties** dialogue shows properties for a selected design. Apart from general information about the design, operations such as unlocking a design, removing a dependency and restoring a backup can be performed (see [Design Properties in Chapter User's Guide to Managing Initial Design Data](#)).

General page

The **General** page shows specific properties of the design. If the design is locked by a user, the lock can be removed by clicking the **Remove Lock** button.

Important: Removing a lock should only be performed if it is known that the 'Locked By' user is no longer using the design.

The design description can be changed by changing the text in the **Description** edit box and clicking **OK**.

Dependencies page


The **Dependencies** page shows a list of design data that this design is dependent on. If any of the dependent designs is updated then the user will be notified when the dependent is opened. If this link between design data is no longer required then the link can be removed by selecting the dependency and clicking the **Remove** button.

Note: This only removes the dependency link. It does not remove the dependency data.

More information can be found on a dependency by selecting it and clicking the right mouse button (see [Design List](#)).

For more information on dependencies, see [Design Dependencies in Chapter User's Guide to Managing Initial Design Data](#).

State History page

The **State History** page shows the history of a design. When the **Save State** button, , is clicked within an application, the design is saved in its current state so it can be restored later.

A previous state of the design can be restored (that is, made current) by selecting the required version in the history list and clicking the **Restore** button from the popup menu. If the **Restore** button is not enabled, then the selected version is not available for restore.

Previous states can be deleted by selecting the states and clicking **Delete** from the popup menu. This will free disk space. Comments from deleted states are retained and can be shown by selecting the **Show details of deleted states** checkbox.

A comment associated with a state can be changed by selecting **Comment** from the popup menu.

Rename Design

Enter a new name for the design. The design, all history and states will be renamed.

Associate Initial Design Project to Model Db (Dabacon)

The **Associate Project** dialogue lets the user select to associate an initial design project to the full design model. An associated project will release hull form, internal surfaces, compartments etc into the full project database.

Associate options

- Select to associate to full project or not
- Choose the project to associate to
- Select the preferred *mdb*.

User's Guide



1 User's Guide to Managing Initial Design Data

1.1 Concepts

All AVEVA Initial Design objects can be stored and managed within the Product Information Model (PIM) environment. Alternatively, initial design objects can be stored in 'stand-alone' Initial Design projects, which can be integrated into the PIM at a later date.

Initial Design objects (curves, patches, longitudinals, compartments, hydrostatics, trim tables, etc.) are stored within Designs pertinent to Initial Design processes (Hull Form design, Compartmentation, Hydrostatic calculations). Design data is shared between design processes by releasing design data to the Project and using it in downstream processes (see [Figure 1:1.: Work flow](#)). See [Data flow between design processes](#) for an example scenario.

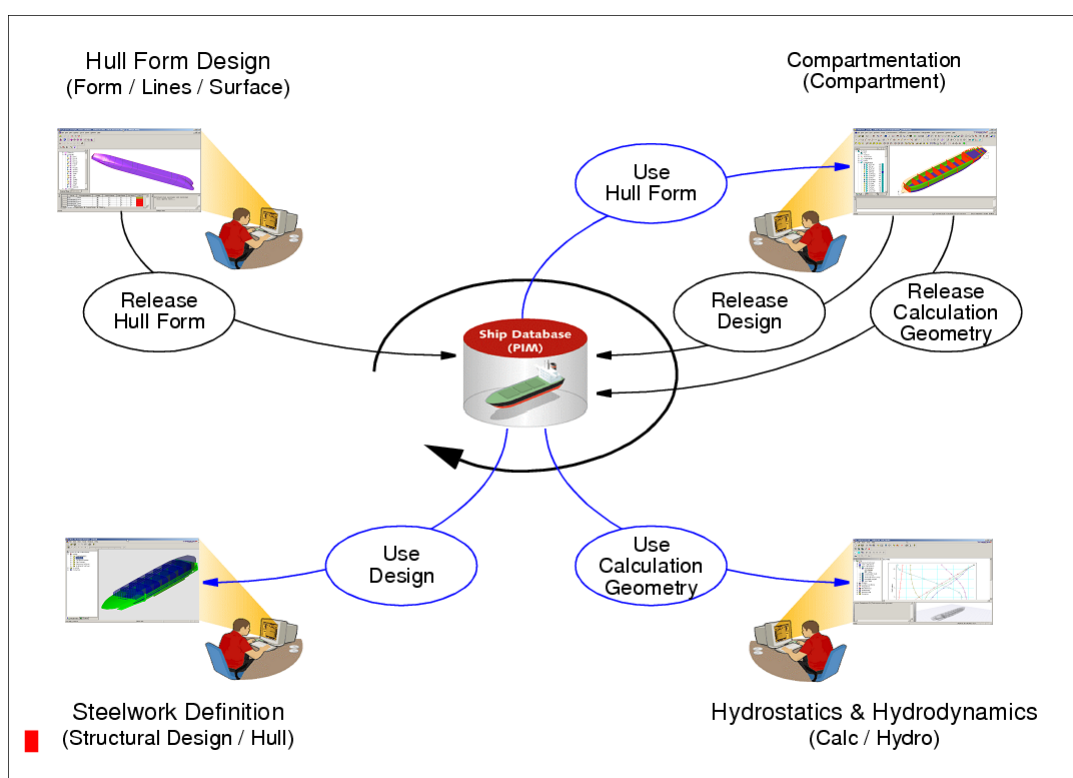


Figure 1:1. Work flow

1.2 Project setup for Initial Design

1.2.1 Data Storage

Setting up a project depends on whether Initial Design is being used within the full PIM environment or standalone. However, once a project has been setup, working with Initial Design is the same whether used standalone or not.

Initial Design objects within the Product Information Model (PIM)

If Initial Design objects are to be integrated into the PIM, then make sure the Environment variable `SB_NAVARCH` is set for the current project. This can be done using the AVEVA Marine Environment Setup applet in the AVEVA Marine Control Panel. The value of this variable should be a folder where Initial Design designs will be stored; normally a sub-folder of the main project folder:

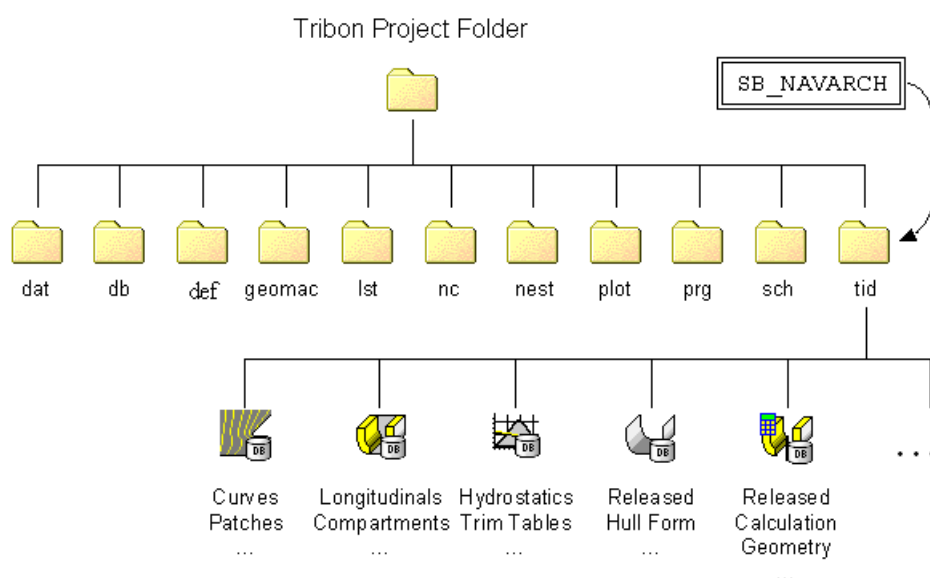


Figure 1.2. PIM structure

The user should also ensure that the environment variable `SB_TID` is also set. This indicates the databank to which Initial Design objects are stored for use by Structural Design and Hull.

A project can then be selected by using the Project Selection application.

Standalone Initial Design Projects

If Initial Design is to be used standalone (that is, no direct connection to the PIM and no direct sharing of information with Structural Design and Hull) then projects can be setup using the AVEVA Initial Design Project Tool with the **Stand-alone** checkbox selected.

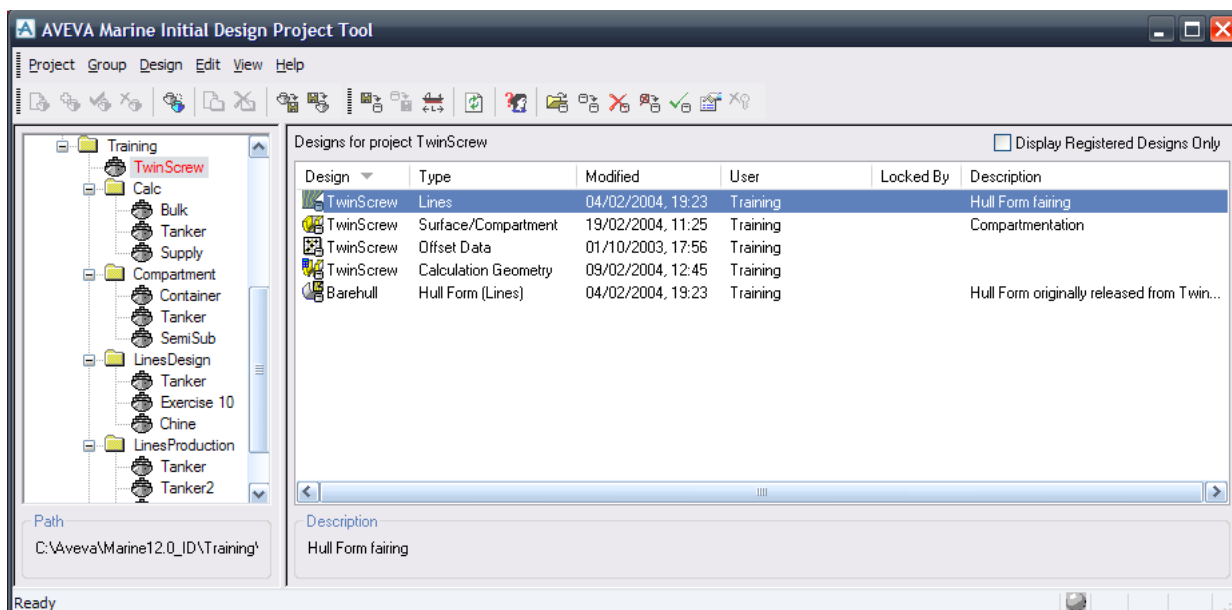


Figure 1:3. Initial Design Project Tool

Initial Design standalone projects are managed in project groups in a tree structure. New groups can be created by right clicking in the project tree, from the pulldown menu or from the toolbar. Projects can be created in a similar way.

A project is selected by highlighting it in the tree and choosing **Select** from the popup menu, from the **Project** pulldown menu or using the **Project Select Toolbar** button.

Input and output data

All input and output files are stored, by default in a subfolder of the Initial Design project folder called **dat**. When inputting and outputting data files from Initial Design applications, **Open** and **Save As** file dialogues will default to this folder. It is recommended that all external input files are stored in this folder.


1.2.2 Incorporating a standalone Initial Design project into the Product Information Model

A standalone Initial Design project can be incorporated into a PIM at a later date. See [Transfer of data to Structural Design and Hull](#).

1.2.3 Design Defaults

Once a project has been selected, defaults for designs can be created (General Particulars, Frame Table, Units, etc.). All new designs will inherit the design defaults. Design defaults can be set when the first design is created, or they can be set from the **Initial Design Project Tool** (see [Figure 1:3.: Initial Design Project Tool](#)):

If working with standalone Initial Design projects, select the appropriate project from the tree. If working within the PIM environment, the currently selected project will be shown.

Select the menu option **EDIT \ DEFAULTS** or click the **Toolbar** button, , and the **Design Defaults** dialogue will appear. Enter appropriate default values for:

- Ship Details
- Particulars
- Parallel Midbody
- Axes
- Frame Table
- Units
- Faceter

Some defaults can be imported from a General Particulars File (GPF) by clicking the **Import** button on the **Particulars** page of the dialogue. See [General Particulars File](#) for a description of the file format.

1.2.4 General Particulars File

This file consists of 14 items each on an individual line.

Line 1	Ship description (up to 80 alphanumeric characters)
Line 2	Length overall (should equal LBP + stem & stern overhangs)
Line 3	Length between Perpendiculars (LBP)
Line 4	Beam
Line 5	Draft
Line 6	Depth at midships
Line 7	Keel half width
Line 8	Height of rise of floor at half beam
Line 9	Bilge radius
Line 10	Amount of rake of keel over LBP
Line 11	Stern overhang aft of AP
Line 12	Stern overhang forward of FP
Line 13	Maximum overall height
Line 14	Minimum height below baseline

1.3 Working with a design


1.3.1 Creating a new design

A design is created for each design process (Hull Form design, Compartmentation, Hydrostatic calculations). More than one design can be created for each design process (for design revisions, for example).

To create a new design, start the application appropriate to design process:

- **Hull Form Design** - AVEVA Initial Design Lines or Surface/Compartment
- **Compartmentation** - AVEVA Initial Design Surface/Compartment

- **Hydrostatics and Hydrodynamics** - AVEVA Initial Design Hydrostatics & Hydrodynamics

Select the FILE \ NEW menu option or click the **New Toolbar** button, . The **New Design** dialogue is presented:

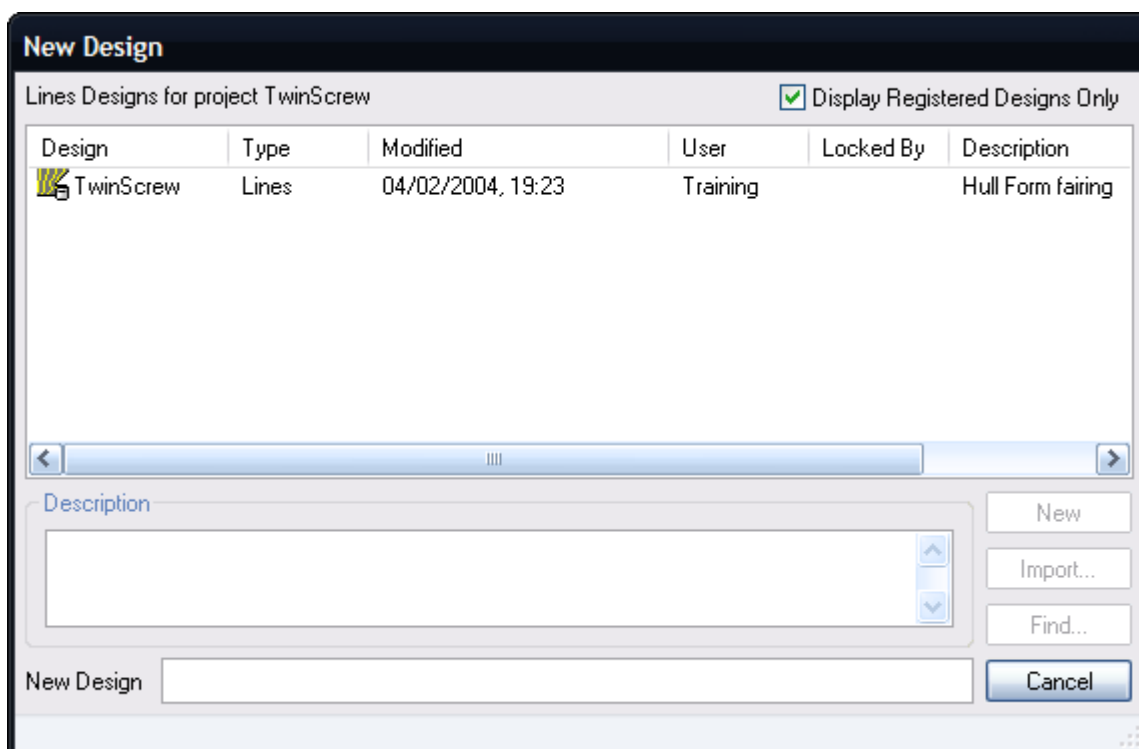



Figure 1:4. New Design dialogue

Enter a name for the design, a short description and click **New**. The design is then created with all design defaults entered during project setup.

1.3.2 Opening a design

An existing design can be opened by starting the appropriate design process and selecting the FILE \ OPEN menu option or clicking the **Open Toolbar** button, . The **Open Design** dialogue is presented:

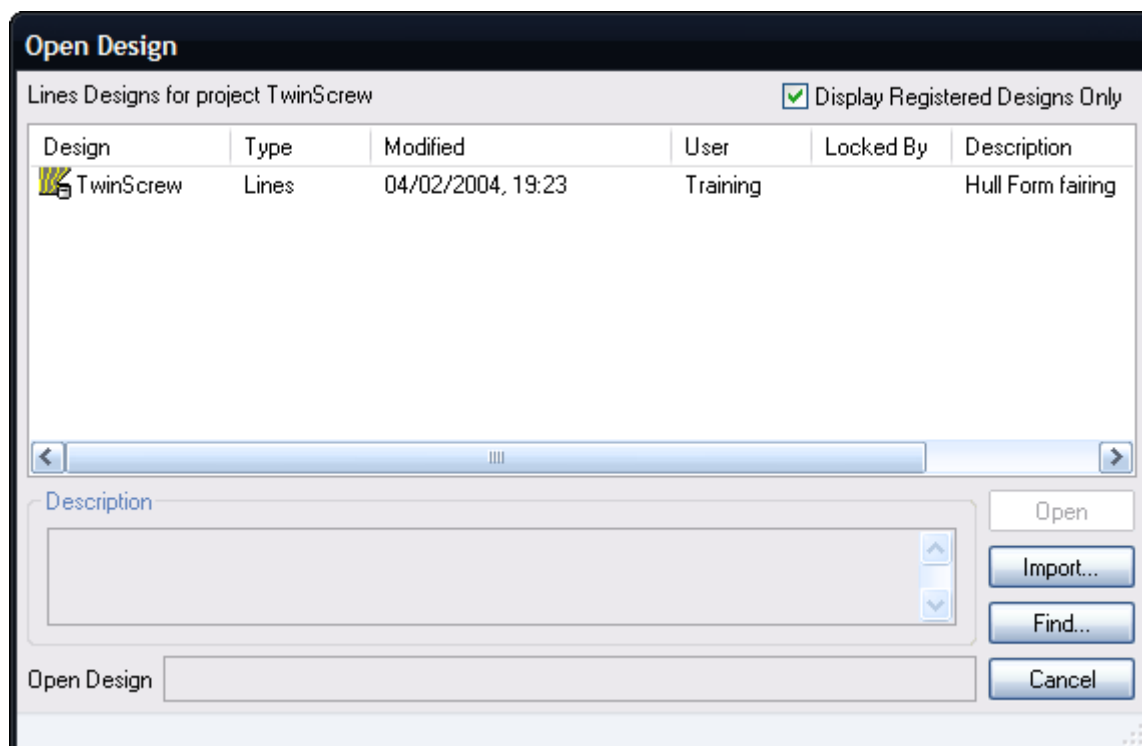


Figure 1:5. Open Design dialogue

Select an existing design from the list and click the **Open** button. Designs can be imported into the current project from previous versions of AVEVA Marine or from other projects by clicking the **Import** button. Traverse for the designs to be imported, select them and click the **Import** button.

If the location of the design to be imported is not known, then click the **Find** button and use the **Find Files** dialogue to locate and import the design:

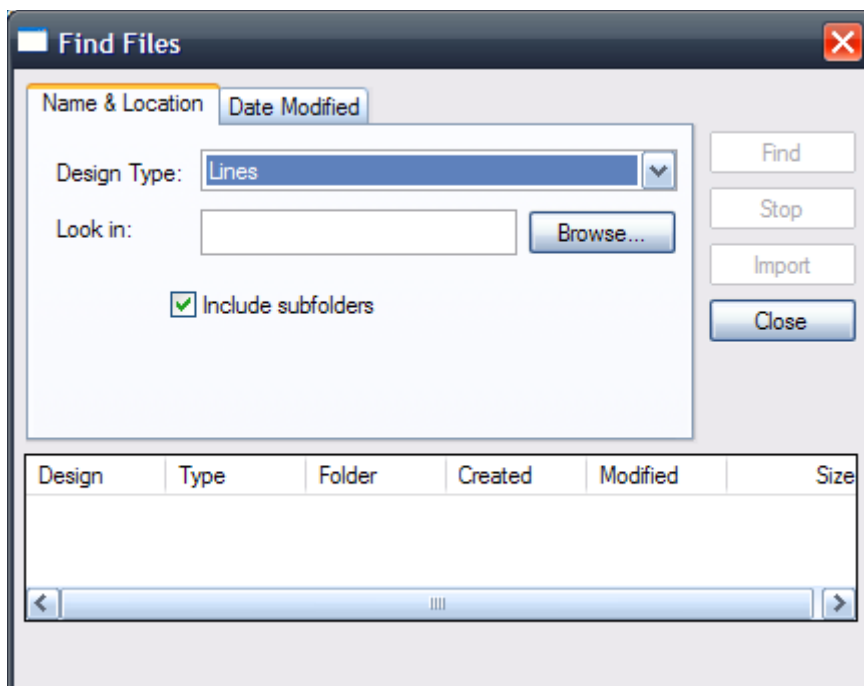




Figure 1:6. Find Files dialogue

1.3.3 Saving a design

A design is saved by selecting the normal FILE \ SAVE menu option or clicking the **Save** button,  .

A design can also be saved in its current state for restoring later by clicking the **Save State** button,  , from the application toolbar. This allows for experimentation with a design, providing the facility to return to a previously saved state. When the **Save State** button is clicked, the **State Description** dialogue is presented. A comment describing the reason for saving the state should be provided

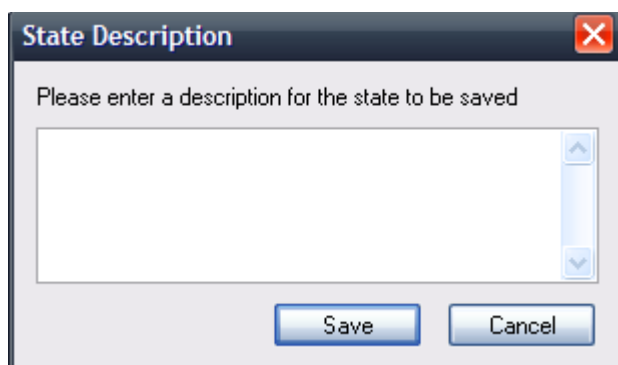


Figure 1:7. State Description dialogue

A saved state can be restored using the AVEVA Initial Design Project Tool (see [Restoring States](#)).

A design can be saved with a different name by selecting the FILE \ SAVE AS menu option. The user is presented with the **Save Design** dialogue.

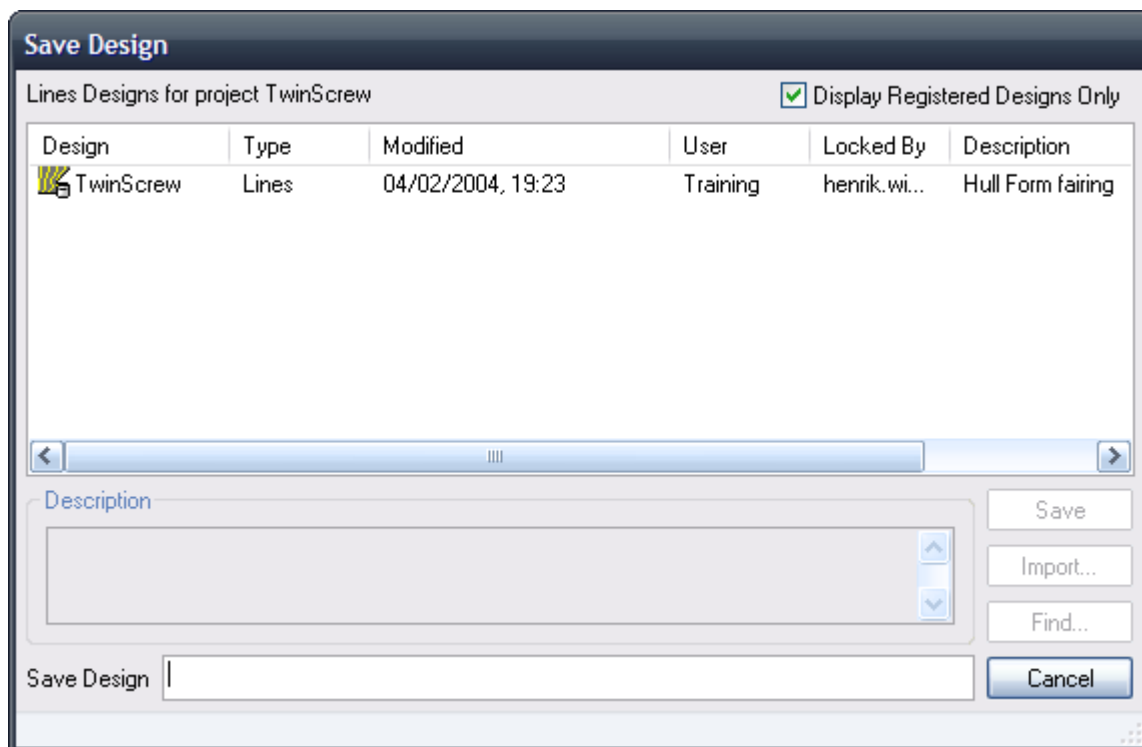


Figure 1:8. Save Design dialogue

Enter a new name for the design and click **Save**.

1.3.4 Design Properties

The properties of a design can be examined from the design **Design Properties** dialogue. This dialogue can be accessed either from the **Design Open** dialogue or the **AVEVA Initial Design Project Tool** by selecting the design in the design list, clicking the right mouse button and selecting **Properties** from the popup menu, or clicking the **Design Properties**

button, , on the Project Tool toolbar.

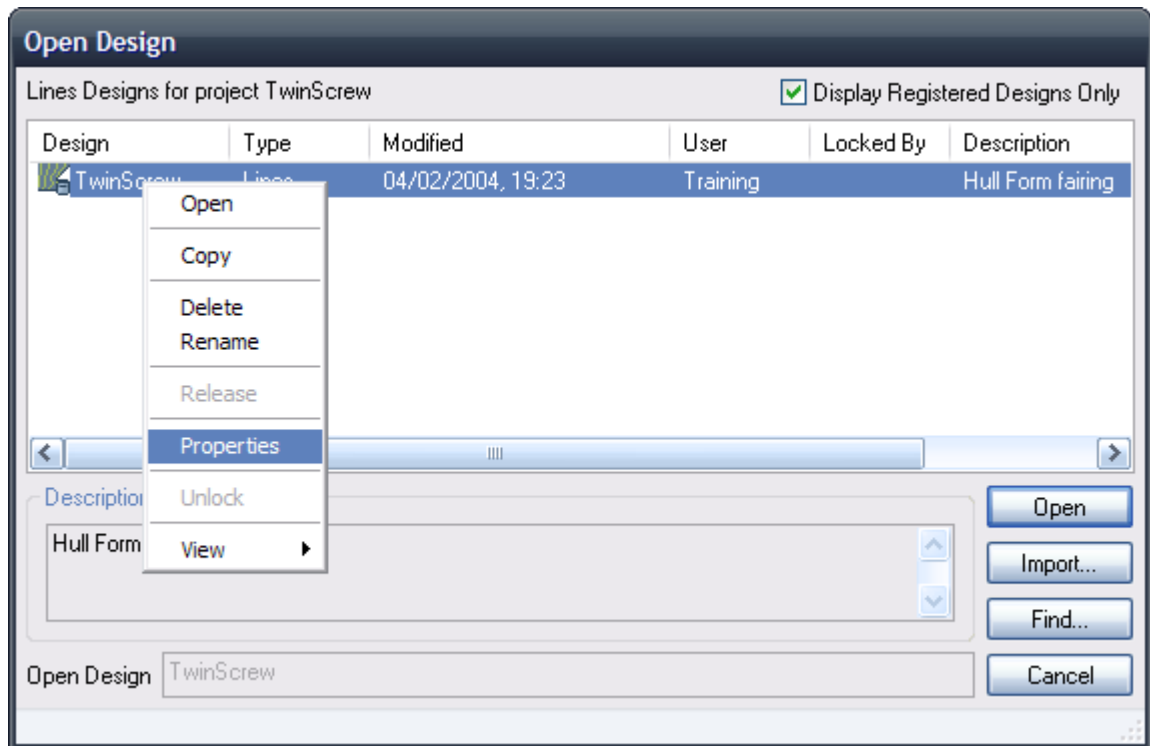


Figure 1.9. Accessing design properties

The **Properties** dialogue contains four pages:

- **General** - Design specific properties, including who, if anyone, is using the design
- **Dependencies** - A list of other designs on which this design is dependent. This page includes the option to remove the connection to a dependency (see [Design Dependencies](#)).
- **State History** - The state history of the design, including the ability to restore a previous state (see [Restoring States](#)).

1.3.5 Design Dependencies

A design becomes dependent on another design when the design *uses* it via the **Use Design** dialogue.

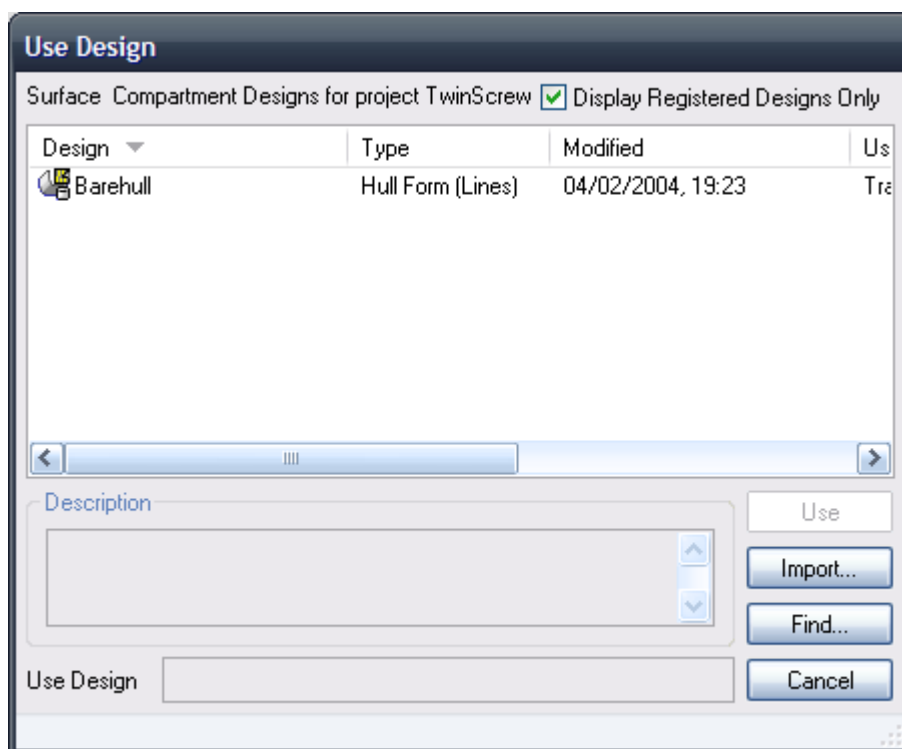


Figure 1:10. Use Design dialogue

For example, A Compartment design may *use* a hull form to generate an envelope. The Hull Form then becomes a dependency of the Compartment design. If the hull form is subsequently changed, then the user is notified when then dependent design is next opened and the option to update the dependency is given:

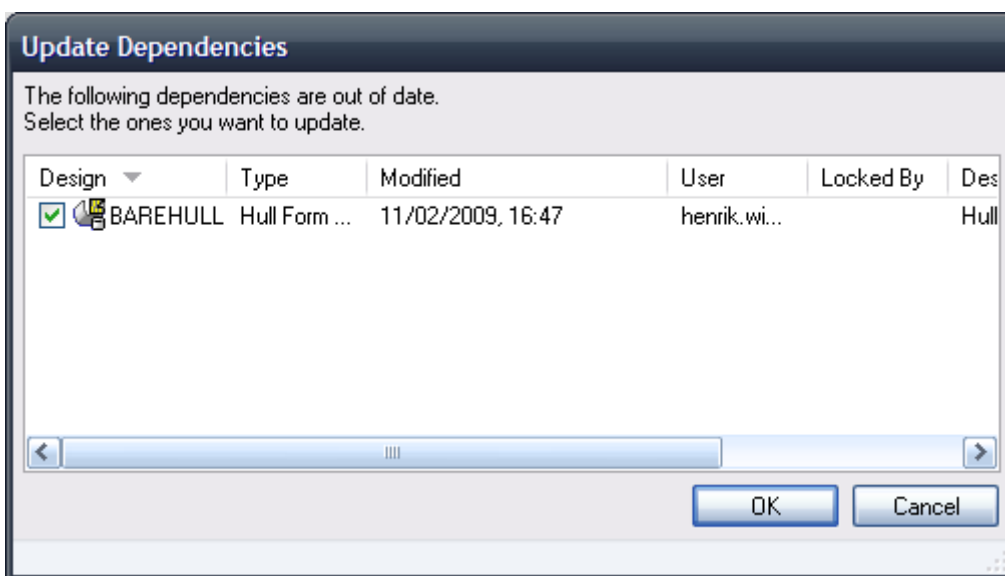


Figure 1:11. Update Dependencies dialogue

In the case of an updated Hull Form, AVEVA AVEVA Compartment will replace the existing envelope with one based on the updated Hull Form.

The link between dependencies can be removed from the **Design Properties** dialogue (see [Design Properties](#) for accessing the **Design Properties** dialogue). From the Dependencies page, select the required dependency and click **Remove**.

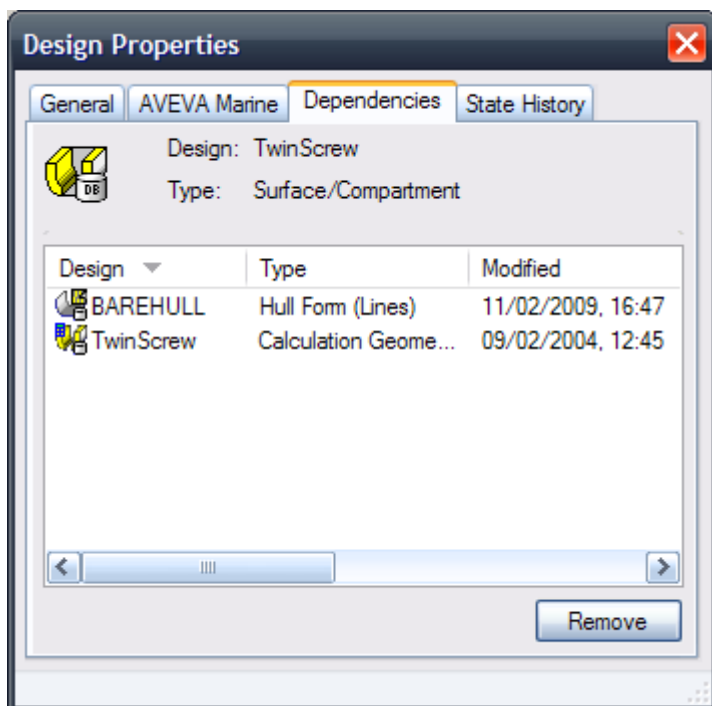



Figure 1:12. Removing dependencies

Note: Removing a dependency only removes the link between the two designs. It does not remove the design itself.

1.3.6 Restoring States

A design can be saved in its current state by clicking the **Save State** button, , from the application toolbar. The state can be restored (that is, made current) later from the **State History** page of the **Design Properties** dialogue, by selecting the required version in the history list and clicking the **Restore** button from the popup menu. If the **Restore** button is not enabled, then the selected version is not available for restore.

Previous states can be deleted by selecting the states and clicking **Delete** from the popup menu. This will free disk space. Comments from deleted states are retained and can be shown by selecting the **Show details of deleted states** checkbox.

A comment associated with a state can be changed by selecting **Comment** from the popup menu.

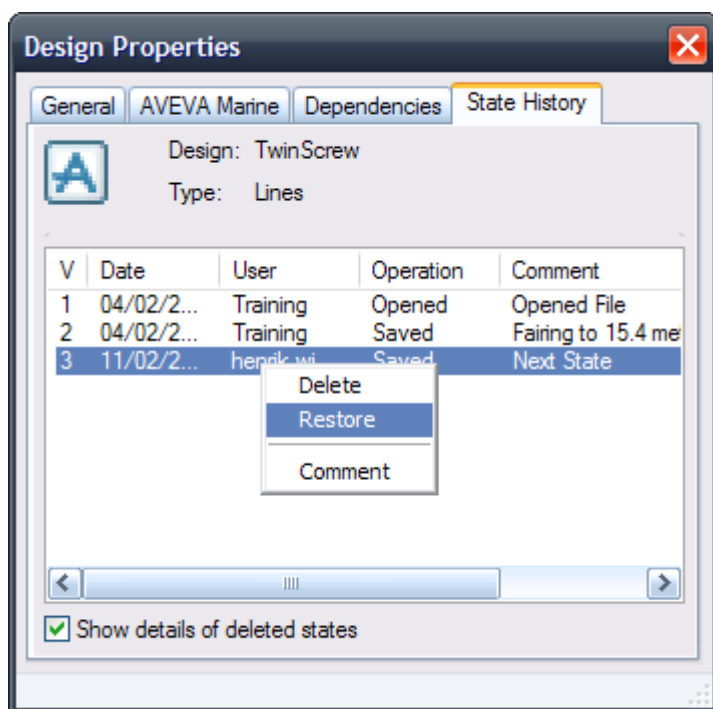


Figure 1:13. History page of the design Properties dialogue

1.4 Managing Designs

Designs are managed using the **AVEVA Initial Design Project Tool**.

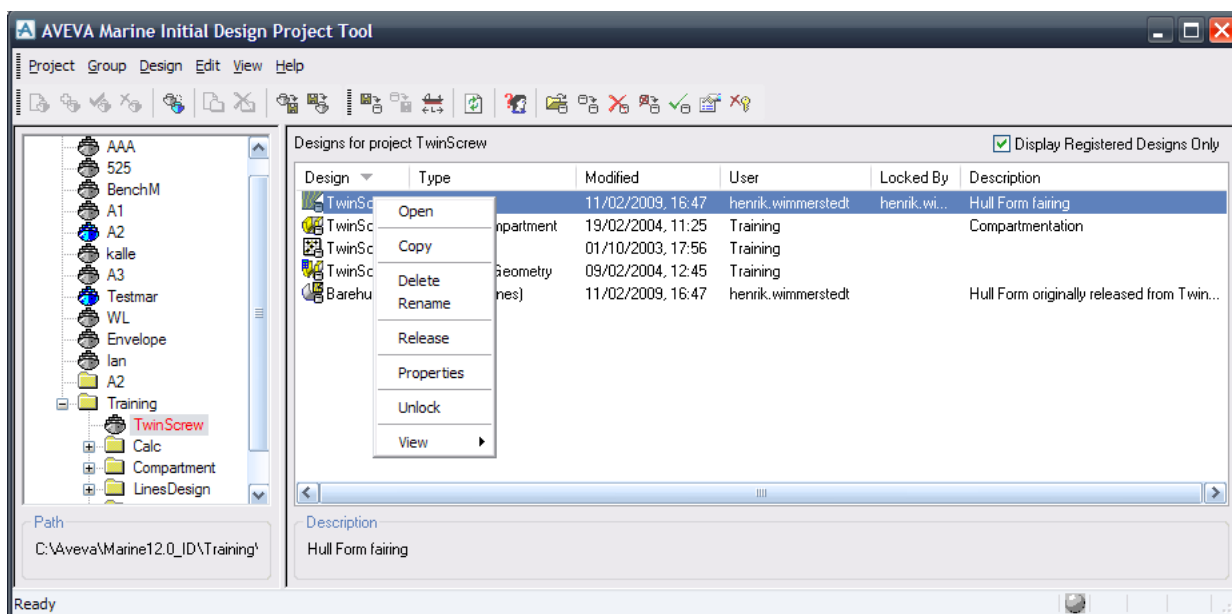




Figure 1:14. Managing designs using the AVEVA Initial Design Project Tool

General options are available from the menu, including facilities to import designs into the project and edit design defaults (see [Project setup for Initial Design](#)). Operations on individual designs are accessed by selecting the design, clicking the **Appropriate** button from the toolbar or clicking the right mouse button and selecting the required operation.

1.4.1 Menu Commands

The following design operations are available from the menu and toolbar:




DESIGN \ IMPORT		Import an existing design (from a previous version or from another project, for example) into the current project
DESIGN \ EXPORT		Export a design from the current project.
DESIGN \ DEFAULTS		Edit design defaults (see Design Defaults)
VIEW		Change format of the list view. This provides the same options as the Views option of the list box popup menu (see Figure 1:15.: Large Icon view , Figure 1:16.: Details View , Figure 1:17.: Small Icons view , and Figure 1:18.: List View)





1.4.2 Design List

The design list shows designs in the current project. If the **Stand-alone** button is checked, then the design list shows designs for the last project selected in the tree. If the **Stand-alone** button is not checked, the design list shows designs stored in the currently selected PIM.

In **Details** view, basic properties are shown for each design (type of the design, modification date, user who last modified the design, person who is using the design, if any, description). Columns can be hidden/shown by clicking the right mouse button over a column header and checking/unchecking the appropriate column title. The list can be sorted by any column by clicking the left mouse button on a column header. The list will toggle between ascending/descending sort.

Operations on one or more designs can be carried out by selecting them in the list and clicking the right mouse button, or the **Appropriate Toolbar** button. The following operations are available:

OPEN		Open the selected design in the appropriate design process, if any
COPY		Copy a design (and all design history) to a new name
DELETE		Delete a design and all design history

RENAME		Give a design a new name
RELEASE		Release data for use in downstream processes. For a Lines design, all hull form definitions are released for use with Surface/Compartment, Hull and Structural Design. They are also written to the Initial Design databank, if available, for visualisation in Design Manager. For a Surface/Compartment design, all surfaces, envelopes, curves, internal surfaces and compartments marked for design are released.
PROPERTIES		Show properties (including dependencies and history, if appropriate) of a design (see Design Properties)
UNLOCK		Remove a lock on a design. Removing a lock should only be performed if it is known that the 'Locked By' user is no longer using the design
VIEW \ LARGE ICONS		View design list with large icons (see Figure 1:15.: Large Icon view)
VIEW \ DETAILS		View design list with details (see Figure 1:16.: Details View)
VIEW \ SMALL ICONS		View design list with small icons (see Figure 1:17.: Small Icons view)
VIEW \ LIST		View design list in list format, with no details (see Figure 1:18.: List View)
VIEW \ REFRESH		Refresh design list
Note: Designs can only be opened or released if the project in view is the currently selected project.		

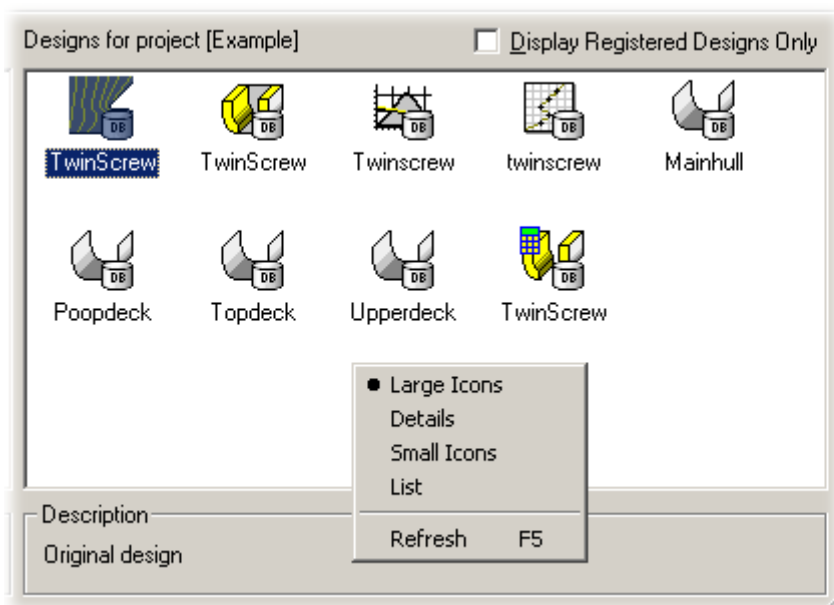


Figure 1:15. Large Icon view

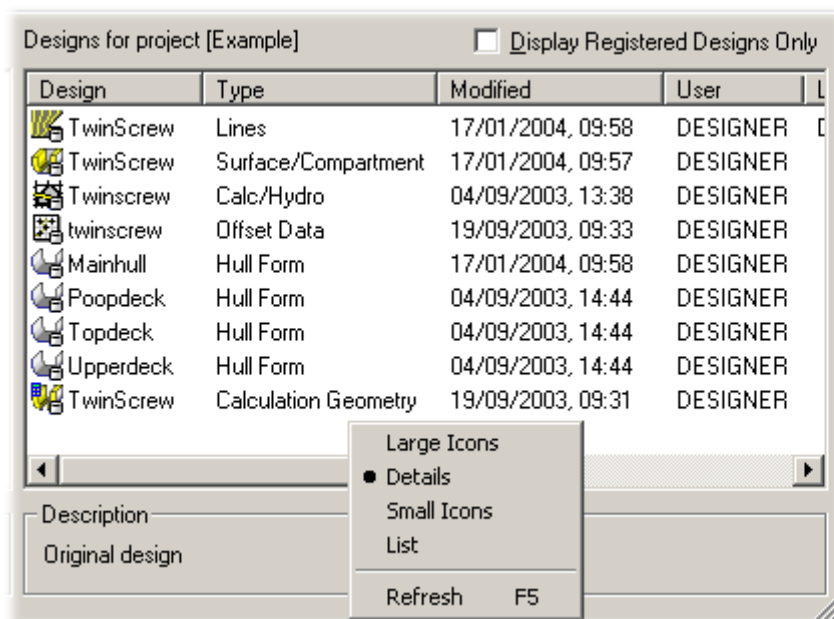


Figure 1:16. Details View

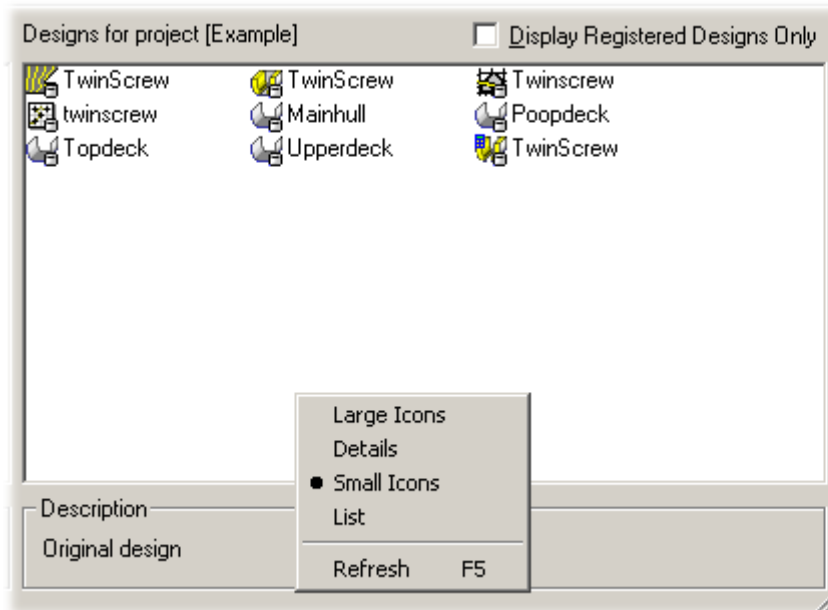


Figure 1:17. Small Icons view

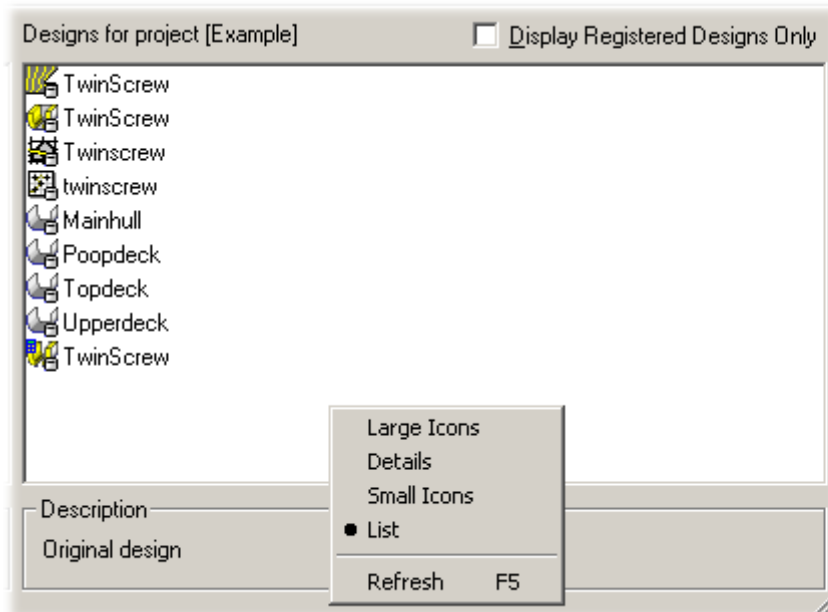


Figure 1:18. List View

1.4.3 Customisation

The design list can be customised when in details view. Columns can be added and removed by clicking the right mouse button over the column headers and selecting/ deselecting a column name).

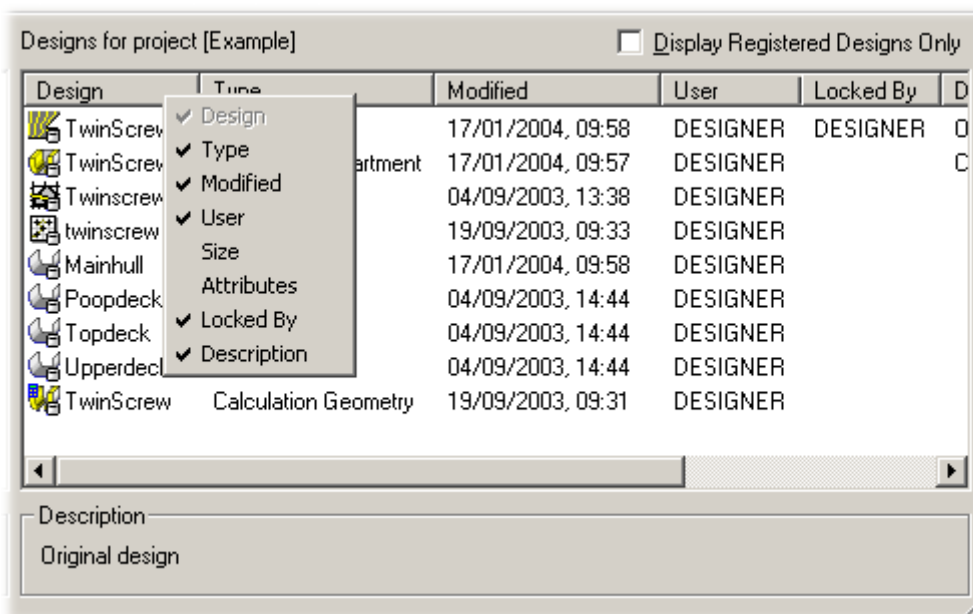


Figure 1:19. Design list column customisation

1.5 Data flow between design processes

Design data is shared between design processes by releasing design data to the Initial Design project or PIM and using it in downstream processes (see [Figure 1:1.: Work flow](#)).

The process of releasing design data makes that data available to other processes; until then it is private to the current process (although still stored in the Project or PIM). Refinement of that design data can then continue, while the released data is used downstream. When the refined data is ready for use, it is released and then re-used by the downstream processes. This allows for parallel development of the design. For example, [Figure 1:20.: Example work flow](#) shows a possible design scenario. In this scenario:

1. Offset data is used to generate a rough hull form (using AVEVA AVEVA Lines and the Patch and Curve Editor). This is quickly generated from little and unfaired data.
2. The rough hull form is released
3. The hull form is refined and faired
4. At the same time as the hull form is being refined and faired, the rough hull form is used for compartmentation (using AVEVA Initial Design Compartment)
5. The calculation geometry and design based on the rough hull form is released.
6. The calculation geometry based on the rough hull form is used for initial hydrostatics (using AVEVA Initial Design Hydrostatics)
7. The design can also be used in basic design processes at this stage
8. Once the hull form has been faired, the new revision is released
9. The refined hull form is re-used and the compartmentation is updated
10. The updated calculation geometry and design is released
11. Hydrostatics are recalculated based on the faired hull form and further analysis performed
12. Any basic design work can be regenerated

Note that steps 7 and 12 are only carried out if Initial Design data is stored in the PIM (see [Project setup for Initial Design](#)).

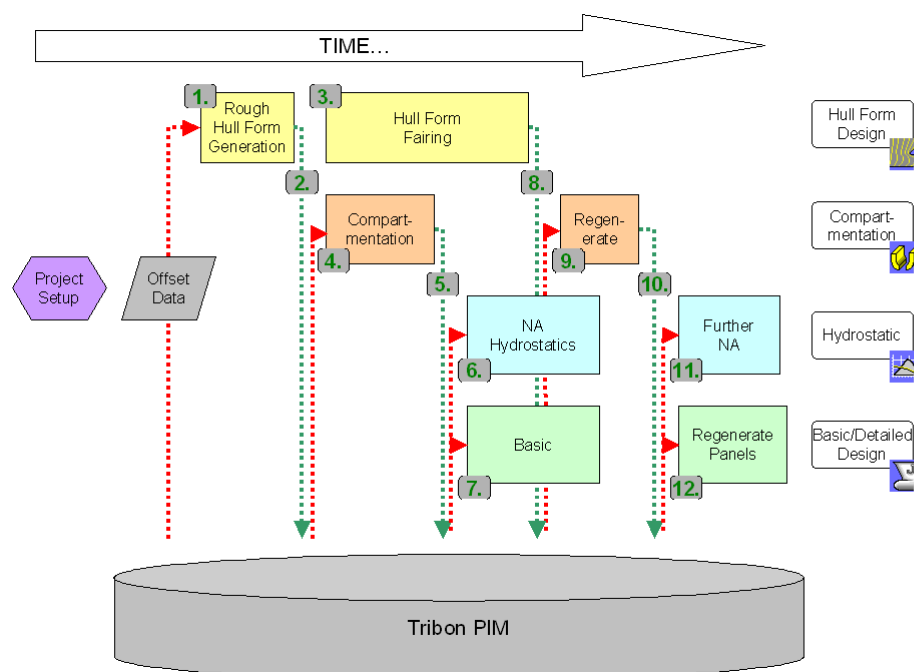


Figure 1:20. Example work flow

This, of course, is just an example scenario. Methods of working with Initial Design will depend on many factors.

The following table shows what Initial Design data can be *released* and *used* elsewhere. Refer to the Lines and Surface/Compartment User's Guides for instructions on how to release Initial Design data.

Data available for release	Released from	Objects released	Used By
Hull Form	Lines	Patches, curves	Surface/Compartment, Structural Design, Hull, Design Manager
Design	Surface/Compartment	Surfaces, curves, bulkheads, decks, compartments	Structural Design, Hull, Design Manager
Calculation Geometry	Surface/Compartment	Bulkheads, decks, compartments	Hydrostatics

Table 1: 1. Initial Design data available for release

1.6 Using Initial Design data in Structural Design and Hull

1.6.1 Data available to Structural Design and Hull

As described in [Data flow between design processes](#), Initial Design data becomes available to downstream process when it is *released* from an Initial Design process. This is also true for using Initial Design data used in AVEVA Marine Structural Design, Hull and Design Manager.

[Table 1: 1.: Initial Design data available for release](#) describes what data can be released and used by Structural Design, Hull and Design Manager. The following table describes how the data objects are used.

Objects	Method of usage
Patches/Surfaces	After a Lines Hull Form or Surface/Compartment Design is released, the Hull Form, Envelope or Surface name needs to be registered as the <i>hull form</i> , <i>deck form</i> or <i>additional surface</i> in Initiate Hull Standards .
Curves	Curves are associated with a Hull Form or Design and so are available when the Hull Form or Design is registered
Bulkheads/Decks	As soon as a Design is released, the bulkheads and decks are available as Reference Surface Objects (RSOs)
Compartment	As soon as a Design is released, the compartments are available.

Table 1: 2. Using Initial Design data in Structural Design and Hull


1.6.2 Transfer of data to Structural Design and Hull

Before Initial Design data can be used in Structural Design and Hull (and visualised in Design Manager), it must be incorporated into the PIM and released. If the designs were originally created within the PIM (and the SB_TID databank setup), then the data will automatically be available. However, if the Initial Design project is standalone, it must be integrated into the PIM. How this is done will depend on the location of the Initial Design project (i.e. whether it is located within the same computer network as the PIM or whether it is on a remote network). Three scenarios are outline here, describing procedures for making Initial Design data available for use in Structural Design and Hull.

Scenario 1

Initial Design designs have been prepared within the PIM (see [Initial Design objects within the Product Information Model \(PIM\)](#)):


- Make sure that the initial design project is associated to a complete project with databank set up if RSO and Compartment information is required.
- Release the appropriate hull forms, internal surfaces and compartments (if not already done). This can be done by selecting the appropriate design using the Initial Design

Project Tool and clicking the **Release** button, .

- Using **Initiate Hull Standards**, register the names of any released Hull Forms, Envelopes or Surfaces which are to be used as sculptured surfaces in Structural Design or Hull.

Scenario 2


Initial Design designs have been prepared in a standalone Initial Design project (see [Standalone Initial Design Projects](#)) and are now to be used within a PIM on the same computer network as the standalone Initial Design project:

- Use the **Associate** function in the Initial Design Project tool to connect the initial design project to the project information model. If the standalone project is local to a user's computer, it may be advantageous to copy the project folder (and all subfolders) to the PIM folders on a project server computer.
- Set the Environment variable SB_TID to SB_TID, which will store Initial Design objects.
- Release the appropriate hull forms, internal surfaces and compartments. This can be done by selecting the appropriate design using the **Initial Design Project Tool** and clicking the **Release** button, .
- Using **Initiate Hull Standards**, register the names of any released Hull Forms, Envelopes or Surfaces which are to be used as sculptured surfaces in Structural Design or Hull.



Scenario 3

Initial Design designs have been prepared in a standalone Initial Design project at a remote site (by a design agent, for example). The design data is now to be used in Structural Design or Hull (at a shipyard, for example):

At the Initial Design site

- Export the Initial Design project by using the **Initial Design Project Tool** and clicking the **Export Project** button,  (the entire project can be exported or selected designs, see [Export Project in Chapter Operator's Instructions - Managing Initial Design Data](#)).
- Deliver the generated Initial Design export file to the Structural Design/Hull site.

At the Hull site

- Setup a folder within the PIM (see [Initial Design objects within the Product Information Model \(PIM\)](#)).
- If not previously created, create a new initial design project and associate it to the complete design project.
- Set the Environment variable SB_TID to SB_TID, which will store Initial Design objects.
- Import the Initial Design export file into the PIM. This is done using **Initial Design Project Tool** and clicking the **Import Project** button, .
- Release the appropriate hull forms, internal surfaces and compartments. This can be done by selecting the appropriate design using the **Initial Design Project Tool** and clicking the **Release** button, .
- Using **Initiate Hull Standards**, register the names of any released Hull Forms, Envelopes or Surfaces which are to be used as sculptured surfaces in Structural Design or Hull.

If an updated Initial Design export file is subsequently delivered, simply import it into the PIM again and re-release the designs.

Note: Note that Initial Design must be installed at the Hull site. No Initial Design licenses are required for importing and releasing data.

