What's New in Common

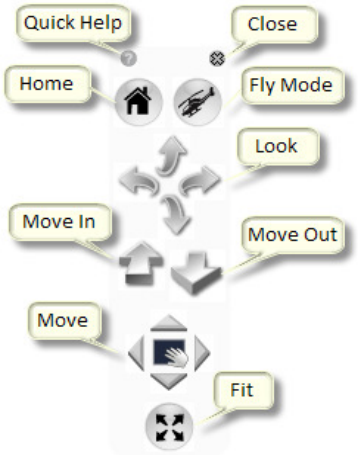
The following changes have been made to the Common task.

Version 2009.1

- Added a **Review MDR Results** *command* (on page 303) to the **Tools > Utilities** menu. Use this command to review the results of a Project Management Material Data Reuse operation.
- Added functionality to copy/paste multiple filters in **Select Filters** dialog box. For more information, see *Select Filter Dialog Box* (on page 212) (P4 CP: 170331)
- Added information about importing data for Electrical, Equipment, HVAC, and Piping using XMPlant. See *Importing and Exporting Data* (on page 14). Also added XMPlant to bring PDMS data into SmartPlant 3D. (P2 CP:163603).
- Added a **Reference 3D** tab to **Workspace Explorer** and a **Reference 3D** filter.
- A gaming-style navigation method has been implemented to make it easier for users to move through the 3D model. When you open a 3D model, you can use mouse and/or keyboard actions that simulate walking through the model. A 3D Navigator tool is also provided as another navigation alternative with controls that support the new move and look motion. To start 3D Navigation, a **Navigate View** command has been added to the main toolbar. (P2 CP:163139)

3D Navigator

The following diagram shows the **3D Navigator** controls and explains their functions. To start navigation click **Navigate View** on the main toolbar. The **3D Navigator** supports the look and move actions you can perform with the mouse and keyboard. *Once you move your cursor off of the* **3D Navigator***, it fades into a transparent shadow.*
Click **Close** to exit 3D navigation.
Use the **Home** control if you are lost within the model and you want to return to the opening model view.
The **Fly Mode** disables the **3D Navigator**. Use your mouse and keyboard controls for navigation.
The **Move In/Out** controls walk you closer or further away from your target point.
Selecting **Fit** automatically takes you to a fitted view of the selected objects in the view, if any. If no objects are selected, **Fit** takes you to a fitted view of the active clip volume. If there is no active clip volume, **Fit** takes you to a fitted view of the entire model.

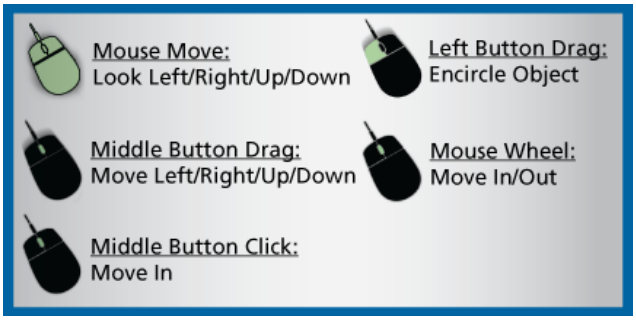


Arrow keys as well as the gaming standard **W** (Move In), **A** (Left), **S** (Move Out) and **D** (Right) are supported.

Mouse Controls (Fly Mode)

Press **F** to enable Fly mode. You have the option to use just your mouse for navigation or use keyboard + mouse combinations. The keyboard + mouse combination controls enable you to change the viewing direction with the mouse and move around with the keyboard. You can right-click, press **ESC** or press **F** again to exit Fly mode.

When you exit Fly mode, you can press **ESC** or right-click again to exit 3D navigation altogether.



Version 2009

- The **Insert > File** command now supports AutoCAD 3D files.
- When copying and pasting large data sets, you can decide whether to clear the Clipboard after a single paste, or to keep the Clipboard contents for multiple paste operations. Also during this process, the

progress bars are now displayed. You can cancel a copy or paste from the progress bars if your computer is running low on virtual memory. A warning message now appears if the clipboard contains a large data set that may use up too much memory. (P2 CP:120812 and P2 CP: 113680)

- You can now synchronize selected model items with changes in the catalog. For more information, see *Synchronize with Catalog Command* (on page 301). (P2 CP:153177)
- You can now use the **Tools > Get Point** command to locate the centroid of planar faces. (P2 CP:114271)
- A new Centerline aspect has been added to the **Format Views** dialog box.
- You can now view and correlate P&ID typical components.
- You can now measure the distance between Point Cloud and SmartPlant 3D objects. (P2 CP:133288)
- The rendering option, **Shaded with Hardware Enhanced Edges**, has been added. This option provides a faster solution for displaying enhanced edges. This option is an alternate display option to **Shaded with Enhanced Edges** in that it uses the software running on your system's video card.

This option may not be supported by your graphics driver and/or graphics card. SmartPlant 3D checks your system information and does not display this option if it is not supported. Loading a new graphics driver could make this option available.

What's New in Equipment and Furnishings

Version 2009.1

- No changes were made to the Equipment and Furnishings task for this release.

Version 2009

- **Place Designed Solid** (on page 67) lets you create highly customize solids and equipment shapes by allowing you to add and subtract shapes from the solid.

- You can now use the down arrow to cycle through the available datum points when placing equipment and equipment components. See *Place Equipment from the Catalog* (on page 12) and *Place Equipment Component from the Catalog* (on page 19). (P3 CP:127695)
- Added **User-defined Equipment Forms**. Use these forms to create forms that hold a picture of the equipment and attribute fields that you use to update your model. As you update the form, the Properties page is updated, as well. One advantage of using this form is that you can see the changes made to the model as you change the form. You do not have to open and close the Properties page. Refer to the *Equipment and Furnishings Reference Data Guide* available from the **Help > Printable Guides** command within the software. (P3 CR: 128029)
- **Can be Deleted** property of the equipment member (like nozzle) is changed to **Behavior Controlled by User**. When its value is set to **true**, the user not only can delete the member but also can modify the location of the member. For more information, see *Place Equipment Component from the Catalog* (on page 19).

What's New in Piping

The following changes have been made to the Piping task.

Version 2009.1

- You can now key-in the bend radius multiplier for bends while routing. This overrides the default bend radius multiplier defined in the piping specification. To allow this, the **Pipe Bend Radius By User Option** must be set to **Pipe bend radius by user is enabled** in the Catalog task. You can find the option in Catalog under the **Piping > Piping Specifications > Plant Options** node in the tree view. A new **Bend Radius Multiplier** box for keying in the bend multiplier value has been added to the **Defaults** tab of the **Route Pipe Settings** dialog box and to the **General** tab of the **Piping Turn Features Properties Dialog Box**. (P3 CP:47794)
- You can now route flexible pipe in the model. For more information, see *Route Flex Pipe* (on page 95). (P3 CP:4006)

Version 2009

- You can now place the default branch as defined in the branch table, or the default turn or default reducer as defined in the pipe specification using the *Insert Component*(on page 81).

What's New in Grids

Version 2009.1

- You can now rotate a grid plane from any elevation plane in the coordinate system, or by a user specified offset from the base elevation plane. In previous software versions, you could only rotate a grid plane about the base elevation plane. For more information on the options, see *General Tab (Grid Plane Properties Dialog Box)* (on page 45) (P2 CP:153262)
- In addition to specifying a grid plane by an angle, you can now rotate a grid place by defining the slope that you want. (P2 CP:153269)
- You can now redefine the coordinate system origin (P3 CR: 72055)

Version 2009

- No changes have been made to the Grids task in Version 2009.

What's New in Structure

The following changes have been made to the Structure task.

Version 2009.1

- Gap frame connections now support gaps by overlap and centerline distance by setting the Offset Type property on the gap frame connection. (P3 CP:140575)
- For Gap frame connections, you can now specify which member is the supporting member for the connection. (P2 CP:153111)
- Slab assembly connections that belong to a deleted boundary are now kept to support copy and Model Data Reuse operations. (P2 CP:151662)
- The Centerline representation is now available for ladders and hoops. (P3 CP:154170)
- Examples of .NET traffic items, such as stairs, ladders and handrails, have been added. (P2 CP:157304)

Version 2009

- The new command **Place Designed Solid** lets you create highly customize concrete shapes by allowing you to add and subtract shapes from the solid. (P2 CP:17860)
- The new command **Place Fireproofing** places fireproofing on selected members. Fireproofing is rule driven by a specification and is customizable without additional programming.
- The **Place Designed Equipment**, **Place Designed Equipment Component**, **Place Shape**, and **Place Imported Shape from File** commands from the Equipment and Furnishings task are now also available in the Structure task.
- You can modify multiple wall parts and wall systems as a group. (P2 CP:119188)
- Designed Member filter is available. (P2 CP:139566)
- A new gap frame connection is available. (P2 CP:70100)
- Wall Assembly Connections have been added and can be selected from the Workspace Explorer using locate filters. (P2 CP:131504)
- The **Split** turn type option can be used to create multiple wall systems using 3-D sketch. In addition, you can use this option to split an existing wall into multiple wall systems. (P2 CP:110171)
- Multiple 2D sketched slabs can be placed on multiple elevations from a single sketch in one operation now. All slabs can then be modified individually without affecting the other slabs. (P2 CP:50747 and CP:135225)
- A handrail's path can now be selected graphically so additional handrails can be sketched in reference to an existing handrail. (P2 CP:38818)
- A Centerline aspect has been added for stairs and handrails. You must set this aspect using the **Format > View** command.
- Added information on the **Toggle Wall Corner Command**. For more information, see *Toggle Wall Corners* (see "Toggle Wall Corner" on page 125)

What's New in Electrical

The following changes have been made to the Electrical task.

Version 2009.1

- You can now modify the route of a cable through an area without changing the route the in another area using the new features on the Edit Cable Path Ribbon Bar. (P3 CP:160236)
- You can now place cable trays with barriers or dividers. Barriers Tab (New Cableway Dialog Box) (P3 CP:17571)
- A Sequence command has been added to order the segments (parts) of conduits or cable trays. (P3 CP:160840)

Version 2009

- You now have the option to allow auto-routing of Cables through a turn or a branch feature whose throat radius value is less than the Cable's minimum bend radius value. (P2 CP: 70035)
- You can now locate the entry and exit points on the cable tray turn and branch features.
- You can route zero specification cableways from conduit end features. See Branch Cableway from a Conduit End Feature (on page 53) and Connect Conduit End Features (on page 78). (P2 CP: 139694)
- Routing for duct banks (on page 24) has been added to the cableway command. You can route duct bank encasement and conduits at the same time. You can also branch the duct bank and route some or all of the conduits. After the duct bank is routed, you can modify it using many of the common applications such as move and copy. (P2 CP: 17587)
- You can set way points (on page 124) and set avoidance zones (on page 124) to ensure that cables are auto-routed the way you want. (P3 CP: 123834)
- For clarity, the Vertical and Horizontal stacking modes have been renamed to Along Depth (see "Multi-Route Tab (New Cableway Dialog Box)" on page 34) mode and Along Width (see "Multi-Route Tab (New Cableway Dialog Box)" on page 34) mode, respectively. (P3 CP: 144551)
- You can now set signal type and voltage grade values to "undefined" in the Cable Properties dialog box (on page 182).

What's New in HVAC

Version 2009.1

- A spooling command has been added for duct objects. (P2 CP: 115528)
- Spooling Duct Objects
- The *Insert Split command* (on page 20) is enhanced to insert multiple splits on duct straight features at uniform lengths. (P2 CP:109742)

Version 2009

- You can now edit weights of HVAC components. (P3 CP: 131679)
- *Editing HVAC Component Weight Attributes* (on page 43)
- *Occurrence tab* (on page 49)
- You can now insert a flange between two non-straight duct features. (P3 CP: 103973)
- *Insert Duct Splits* (on page 21)
- *Insert Split Ribbon* (on page 20)
- *Insert Split Command* (on page 20)

What's New in Hangers and Supports

Version 2009.1

- You can now place a drawing note anywhere on a support using the Assembly Information Rule. Previous to this release, notes had to be placed at key-point locations. Now you can place control points anywhere along the support and then place the note associated with the control point. A sample support is provided: HS Assembly > L/T Shaped Frames > Inverted T-Shaped Frame LS. (P1 CP:127812)
- Third-party assembly definition software can now be used with SmartPlant 3D to place parts on a designed support. (P2 CP:125874)
- Integration with the Lisega interface allows you to design a support in LICAD and then automatically instance all parts in SmartPlant 3D. (P3 CP:101537)
- Cutback steel sections are now recognized by the **Place by Point** and **Place by Structure** commands making it easier to place supports onto frames made with cutback steel. (P2 CP:152752)
- You can define point welds or weld paths to an existing designed support using the **Place Part** command, or you can define supports with welds. A sample support with welds is provided: HS Assembly > L/T Shaped Frames > Inverted T-Shaped Frame LS > Assy_FR_IT_LS_Weld. (P2 CP:37046)
- Supports will now automatically attach to the structure face nearest the support. (P2 CP:88273)
- Top of steel elevations of hanger beams are now labeled in hanger drawings. (P3 CP:157056)
- You can now place supports on a pipe end caps. A sample support is provided: HS Assembly > Leg Extensions > Dummy Leg. (P2 CP:142650)
- All supports along a pipe run are automatically deleted when the pipe run is deleted. (P3 CP:154290)
- Rigid joints can now have an angular offsets other than 90 degrees. A sample support using the new AngularRigidJoint joint is provided: HS Assembly > Rigid Rods > Rigid Rod with Riser Clamp. (P2 CP:118354)
- Documented new workbook for Hanger Steel parts and Hanger Cutback Steel parts. Provides a new Part Class Name and Part Class Type: ConnectionSupportComponentClass. See Hangers and Supports Reference Data. (P3 CP:156834)
- New Hangers and Support point and rectangle part, Marine Support, TrayShip Cable Tray and Rich Steel libraries are provided. The following workbooks are delivered in the [*Product Folder*]\CatalogData\BulkLoad\DataFiles directory. For more information, see Hangers and Supports Reference Data.
- HS_S3DParts.xls
- HS_3DParts_Codelist.xls
- HS_Str-AISC-LRFD-3.1.xls

Workbooks delivered in [*Product Folder*]\CatalogData\BulkLoad\AdditionalDataFiles directory:

- HS_Marine.xls
- HS_Marine_Assy.xls
- HS_Marine_Assy_Codelist.xls
- HS_Str-AISC-LRFD-3.0.xls

- HS_Str-AISC-LRFD-3.0.xls
- HS_Str-AISC-Metric.xls
- HS_Str_AISC_SHAPES-3.1.xls
- HS_Str_AUST.xls
- HS_Str-AUST-05.xls
- HS_Str-BS.xls
- HS_Str-Chile-2000
- HS_Str-China-2006
- HS_Str-CISC-7-2.xls
- HS_Str-CISC-8.1.xls
- HS_Str-Euro.xls
- HS_Str-EURO-OTUA-2002.xls
- HS_Str-Japan.xls
- HS_Str-Japan-2005.xls
- HS_Str-Russia.xls
- HS_Str-SAISC-2002.xls
- HS_TrayShip.xls
- HS_TrayShip_Codelist.xls

Version 2009

- A vessel guide for 4-inch to 8-inch vertical pipe, and a generic guide for 4-inch to 8-inch vertical pipe has been added to the HS_Assembly catalog.
- A new cable tray support has been added to the support library, providing an Angle Bar type support. The workbooks are delivered in [*Product Folder*]\3D\CatalogData\BulkLoad\AdditionalDataFiles directory. These include HS_TrayShip_Assy.xls and HS_TrayShip_Assy_Codelist.xls. When bulkloading these files for the TrayShip supports, it is also necessary to bulkload the HS_ShipSteel.xls and HS_Correspondence.xls workbooks.
- Support component edges can be selected for measuring and positioning reference.
- Added a description of the Naming Rules for Hangers and Supports. For more information, see *Hangers and Supports Naming Rules.* (see "Naming Rules" on page 4) (P3 CP:114997)

- For Power1 Assemblies CS1_V CS1 and CS2 type supports:
- A new attribute called "angle of rotation" is provided for rotating the assembly.
- The supports can be placed with springs in the rods and the spring positions, top, middle or bottom. The support values can be modified independently.
- Load type is based on the maximum temperature at maximum load. The part selection is used on the load type and the pipe outside diameter.

- Power1 Assemblies SS3_V and SS4_V type supports can be placed for multiple pipes.
- The generic penetration plate placement on multiple pipe arrangements has been enhanced.
- New Hangers and Support steel part and Smart Cutback Steel libraries are provided. The primary benefit of the new Hangers and Support steel part is in assembly creation. Another benefit is the ability, at the time of placement, to change the cardinal point with which you are placing the New Hangers and Support steel part component. Previously-delivered workbooks are renamed and a new set of steel files are delivered. These files are named to match the structural workbooks upon which they are dependent. They are delivered in the [Product Folder]\3D\CatalogData\BulkLoad\DataFiles directory:
- HS_Struct-AISC-LRFD-3.1.xls
- HS_System_Codelist.xls
- HS_HgrAisc- LRFD-3.1_Deprecated.xls

Workbooks delivered in [*Product Folder*]\3D\CatalogData\BulkLoad\AdditionalDataFiles directory:

- HS_Struct-AISC-LRFD-3.0.xls
- HS_Struct-AISC-Metric.xls
- HS_Struct-AISC-SHAPES-3.1.xls
- HS_Struct-AUST.xls
- HS_Struct-AUST-05.xls
- HS_Struct-BS.xls
- HS_Struct-Chile-2000.xls
- HS_Struct-China-2006.xls
- HS_Struct-CISC-7.2.xls
- HS_Struct-CISC-8.1.xls
- HS_Struct-Euro.xls
- HS_Struct-EURO-OTUA-2002.xls
- HS_Struct-Japan.xls
- HS_Struct-Japan-2005.xls
- HS_Struct-Russia.xls
- HS_Struct-SAISC-2002.xls
- HS_HgrAisc_Deprecated.xls
- HS_HgrAust-05_Deprecated.xls
- HS_HgrCisc_Deprecated.xls
- HS_HgrEuro_Deprecated.xls
- HS_HgrEuro_OTUA-2002_Deprecated.xls
- HS_HgrEuro_OTUA_Deprecated.xls
- HS_HgrJapan_Deprecated.xls

What's New in Drawings and Reports

The following changes have been made to the Drawing and Reports task.

Version 2009.1

Piping Isometric Drawings

Alternative Text (AText) reference data is now delivered as part of the online documentation. For more information, see Appendix: AText Reference Data.

Version 2009

Drawings (General)

- Clarified the ability to create more than one Drawing Batch Server for a site database. For more information, see *Batch Processing* (on page 136). (P2 CP:158208)
- Added clarification about saving a drawing to Microstation or AutoCAD format. For more information, see *Save As MicroStation or AutoCAD Format* (on page 178). (P2 CP:137251)
- The new **Dimensioned Label** command available in the **Manual Place Labels** command allows you to place a dimension that displays a label instead of a dimension value. For more information, see *Dimensioned Label Command* (on page 182). (P2 CP:150173)

Orthographic Drawings

Added a workflow example for placing a dimension-like label. For more information, see *Place a Dimensioned Label* (on page 183). (P3 CP:152913)

Added example of GetActual3DGeometry.dll in Custom Graphic Rule Examples Appendix. (P3 CP:132325)

Added example of PlaneGeometryDrawingWrapperEntity.dll in Custom Graphic Rule Examples Appendix. (P3 CP:132324)

Piping Isometric Drawings

Added a workflow for placing labels on surface-mounted components and instruments. For more information, see Piping Isometric Drawings Surface-mounted Components Label.

What's New in Space Management

The following changes have been made to the Space Management task.

Version 2009.1

- You can now break associations between a volume and an object that has been associated with that volume. (P3 CP:79116)

Version 2009

- The **Enable Assoc Point Creation** and **Disable Assoc Point Creation** toolbar buttons provide visual cues to indicate whether any selected volumes have associative points. The associative points must be removed from a volume before it can be moved.