Class PF5291 : Factory Design Suite 2015

90 minutes Hands-on For Beginners

Peter De Strijker - Technical Specialist, Autodesk Benelux
User Assets Library

It’s important to be able to populate the library with user specific assets. Let’s create one!

1. Open the **Import Asset** function in Inventor Factory Ribbon.
   Ribbon: Get Started > Factory Launch > Create Asset > Import Asset
Select `<FDS-ROOT>`\ `FDS HandsOn\Production Area\AssetCreation\ Robot Controller.ipt` file and click *Open*.

The model is loaded into the *Asset Builder*.

2. Open the *Landing Surface* function.
   
   Ribbon: Asset Builder > Author > Landing Surface

   Select the bottom surface of the machine enclosure to define it as the landing surface.

   ![Landing Surface selection](image)

   In the *Landing Surface* dialog, click *Select Insertion Point* and select the two points marked. Click *OK* to confirm the changes.
3. Open the **Define Connector** function.
   Ribbon: Asset Builder > Author > Define Connector

Select the center of the left-hand edge as the insertion point.

Select the red direction arrow and click the left-hand vertical edge of the box to define alignment.

Select the blue arrow and select a vertical edge on the model. The blue arrow now points upwards.
4. Create a second connector in the same way.
5. Open the **Asset Variants** function.
   Ribbon: Asset Builder > Author > Asset Variants
   
   Select the **Width** parameters and click the >> button.
Using the + button, create three variants with the following values and click **OK** to close the dialog.

<table>
<thead>
<tr>
<th>Variant</th>
<th>Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variant_1000</td>
<td>1000</td>
</tr>
<tr>
<td>Variant_1250</td>
<td>1250</td>
</tr>
<tr>
<td>Variant_1750</td>
<td>1750</td>
</tr>
</tbody>
</table>
6. Open the “Descriptor” function and select top face of controller.

7. Fill in text as shown below and validate.

8. Open the **Asset Properties** function.

   Ribbon: Asset Builder > Author > Asset Properties

   On the **General** tab, enter Title **Robot Controller** and Company **Autodesk** and click **OK** to confirm your entry.
9. Save the design.

10. Open the **Publish Asset** function.

   *Ribbon: Asset Builder > Publish > Publish Asset*

   Enter asset name *Robot Controller* and select a destination directory. Click **OK** to confirm your entry.

11. Close the part.
Create a New Sub Layout Area

12. Open `<FDS-ROOT>\ FDS HandsOn\Production Area\ Factory_2014_Planning \Mannheim_F.dwg`

13. Type `XREF` in the command line to launch External References Manager

14. Attach new XREF “Mannheim_G.dwg” to the drawing
15. Use Xref import settings as shown

16. The xref will be automatically positioned as shown below

17. Select the outline of the xref(1).

18. Click the Open Reference command on the Context Ribbon (2).

19. Activate the Factory Asset Browser by selecting the **Palettes** flyout on the Factory Ribbon and Click **Asset Browser**.
20. Open this library folder in the Asset Browser

21. Drag and drop Assets from the Asset Library into the layout as shown below
22. Click on icon and draw a line as shown below

23. On command line type “elevation” + enter. Enter a value of 3500 + enter.

24. Click on icon and draw a line as shown below

25. Click the Sync Inventor Command.

26. Click OK on the dialog that displays.
27. Click Yes on the Save Notification is necessary.

28. The Inventor application will launch and create a 3D version of your 2D layout.

29. Let’s wait a few seconds ....this is what you’ll get

30. Select Robot 7th Axis asset in library

31. Connect the Robot positioning table to the frame connector as shown below
32. ...and let it snap like this.....

33. Select ABB robot asset in library

34. Complete the layout as shown below
35. Open Layer Manager

36. Create new Layer “Conveyor”
37. Select all conveyors in the layout
38. Set current layer to “Conveyor”

39. On the Factory Ribbon, Click the **Sync AutoCAD** command.
40. If prompted to Save the file, Select *Yes* and *Ok* to any dialog prompts.

41. Click *Yes* when prompted to open the File in AutoCAD.

42. Autocad Xref will be updated with all 3D changed made

43. Save this file

44. Switch to the Overall.dwg file and update all Xref's
45. Overall Layout is updated with new Xref content.

46. Open the *Material Flow Browser*.
   Ribbon: Factory > Tools > Palettes Flyout > Material Flow

47. Click on the *Stations* ribbon tab.

48. Click on the *Products* ribbon tab.

49. RMB on *Transmissions* and Create Routing
50. Select stations as shown below

![Diagram of selected stations]

51. Routings tab should look like this

![Material Flow Browser with selected stations]

52. In Factory Ribbon, select Transportation tab

![Transportation tab icon]

53. Result should look like this

![Final result diagram]
54. Move Storage out to location as shown below

55. See the impact on time and logistics

56. Close Optimization environment by selecting button below

57. Click the Sync Inventor Command.
58. Click OK on the dialog that displays.

![Sync Inventor dialog](image)

59. Click Yes on the Save Notification is necessary.

![Sync Inventor dialog](image)

60. See how Inventor now synchronizes with optimized layout

![3D diagram](image)

61. You can see there is miss alignment with an existing conveyor from another sublayout. We need to expose the connector to entire assembly
62. Edit subassembly Mannheim_G :1 by double click on it

63. Select expose connector

64. Select green connector to expose as shown below

65. RMB and select “done”

66. Stop editing subassembly Mannheim_G :1
67. Hit F8 and drag the band conveyor to the connection point of the roller conveyor.

![Diagram](image)

68. **OPTIONAL**

![Insert Model]

69. Insert solid building

70. Select file Solidbuilding1.ipt

71. Position the modal anywhere

![Insert Model]

72. Confirm position

73. In the Assembly tab, select following function

74. Select solid building and confirm

75. Layout should look like this
Point cloud project integration with Recap

76. In Manage tab, select Autodesk Recap

77. Select yes and Recap will be launched

78. Create a new project and give it a name and destination
79. Select Files to Import button

80. Browse for file Bestand_Original.rcs and open

81. Launch project

82. Screen should look like this
83. Let’s make a discovery flight through the point cloud data

84. After the fly through, select Front in the View Cube.

85. Change to Orthographic view by selecting
86. Box select the top of the point cloud data

87. Create a new region
88. Hide new region

89. Go to Top view, model should look like this
90. Clean out the point cloud data like image below

91. Make hidden region visible again
point cloud data should look like image below
93. Safe the project and switch back to Inventor

94. In Manage tab, select Attach

95. Select the new saved *.rcp project and click anywhere in the layout

96. In the dialog box, insert point cloud project at origin
97. Inventor Layout should look like this
Project Overview Navisworks

98. Open the application NavisWorks Manage

99. Open the file \E:\AIA2013\FDS Hands on\Production Area\Factory_2014_Planning\FDSLayout.nwd

100. In the viewpoint ribbon, select “Start” viewpoint

101. Walk around and look around in the facility.
102. Let’s check for collisions, select this button

103. Add a new test

104. Expand the selection boxes and select models as shown

105. Run the test
106. You will detect a collision

107. Let’s markup this error for engineering and save the viewpoint.

108. Create a markup
109. Add some comment

110. Go back to “start” viewpoint

111. Access Ribbon command in Animation ribbon

112. Record animation while walking through facility

**Shaded visual**

113. Return to Inventor

114. Make settings in View ribbon as follows
Image should look like this

Thanks!