intratech

Intelligent 3D PDF Exporter for Navisworks®

Easy to Use

Multiple Industry Uses

Clash Reporting

3D PDF Exporter

Combined 3D PDFs

Convenient Exporting

GA Drawing

User Guide

Version 16.1

Revision History

Release No.	Date	Revision Description
16.0.0.7	2015/11/12	Initial Revision (draft)
16.0.0.9	2015/12/24	Updated setting values
16.0.2.6	2016/04/08	Updated GA drawings/ISO drawings/Mapping Rules
16.0.3.9	2016/06/17	Updated multiple PDF exporting functions and customized PDF template
16.1.2.12	2016/08/25	Support U3D format for PDF output files2016/08/25

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Introduction

Intelligent 3D PDF® Exporter for Navisworks is an add-on software that users can use to convert selected model(s) with neighboring objects or clash reports into a 3D PDF. Combine your GA drawings with the data that you specifically select, including properties and hierarchy while exporting everything into a convenient 3D PDF.

Our program enables you to:
- Export selected objects and their neighbors while maintaining a viewpoint to simply the visualization and limit the need to export an entire model.
- Export items with selected clashes to easily visualize your clashes and export them to 3D PDF files with the relevant neighbors.
- Combine selected 3D spaces in Navisworks with your 2D GA Drawings into a single, high functionality 3D PDF.
- Simplify the combination of 2D ISO Drawings and 3D Pipe lines together in our powerful 3D PDFs.

BENEFITS

Simple

Creating 3D PDF is easier than you think. Just 1-2-3 click, you can create Intelligent 3D PDF on the fly.

Easy

3D PDF can reduce the 2d drafting efforts with embedded 3D view.

Light

Create lightweight 3D PDF by converting selected object(s) only instead of exporting the whole model.

Intelligent

TAGs in 2D and objects(space) in 3D are linked.

Installation Guide

Basic System Requirements

For our program to operate correctly, computers that will run our program require these minimum specifications:

- Windows 64bit

- A licensed copy of Navisworks (2014, 2015, or 2016)

- Net framework of 4.5 or later

Setup Guide

After downloading the file, double click on the installation file and begin the downloading process. Click "Next" and continue through the installation process.
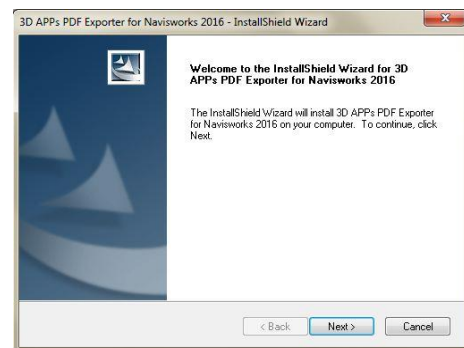
While going through the installation for the first time, it is possible to begin a 15 day free trial to test the program in order to make a final decision.

- Click "Try" to continue trial with the trial version
- Displayed at the bottom is the remaining days available on your free trial.
- When you are ready to activate, click the "Activate" button and continue to the activation process.
- Select your "License Type" and enter your activation key. This can be found on your License Certificate.
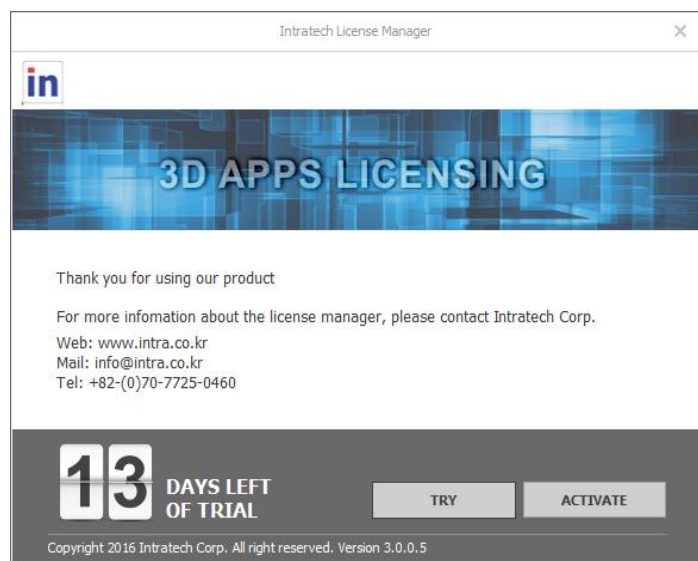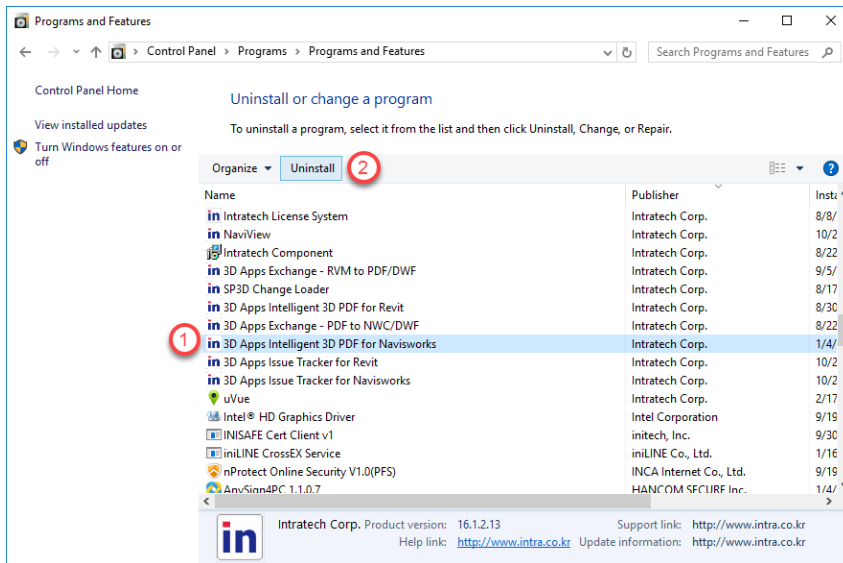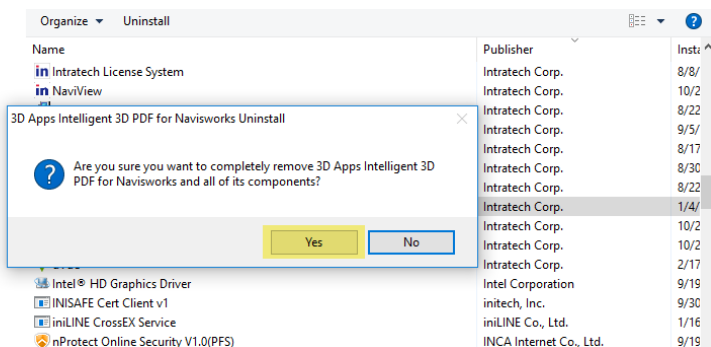
Uninstall

To uninstall 3D Apps Intelligent 3D PDF for Navisworks, please go to Control Panel and open Programs
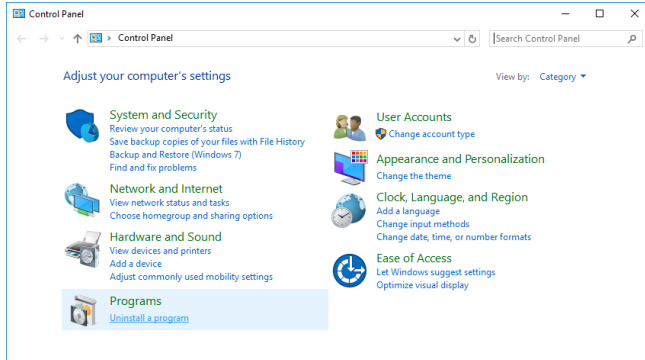
You can find 3D Apps Intelligent 3D PDF for Navisworks in the programs list. **Select 3D PDF for Navisworks** and then click **Uninstall** button.
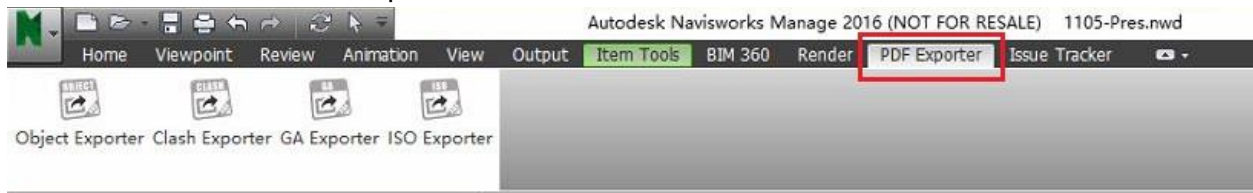

Then dialog box for uninstall confirmation will be displayed. Please click **Yes** to proceed the uninstallation.

Application User Guide

Getting started:

- Open your version of Autodesk® Revit®.
- From the top menu, select the "PDF Exporter" tab.
- Within the PDF Exporter tab, there are 4 main functions:
  - Object Exporter
  - Clash Exporter
  - GA Exporter
  - ISO Exporter

Object Exporter:

When opening the Object Exporter function, the following window will be displayed.

For a more detailed explanation of the "Settings" and "About" sections, please refer to the relevant sections (5. Setting 6. About).
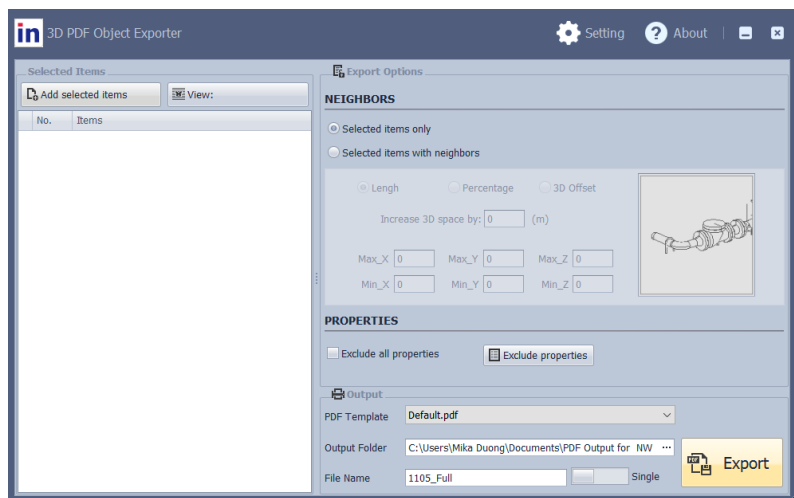
Export Selected Items:

To export selected items, please select the required items from the "Selection Tree' on the left or from the 3D viewer in the middle section.
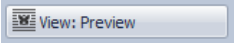
Once an item is selected, click "Add selected Items" to add them to the list on the right. All of the selected items will be added to the export list
- Select Items from "Selection Tree" or from 3D viewer and choose "Add selected Items"
- All selected items will be added in the export list
- There is no limit to the number of items that can be added to the export list.
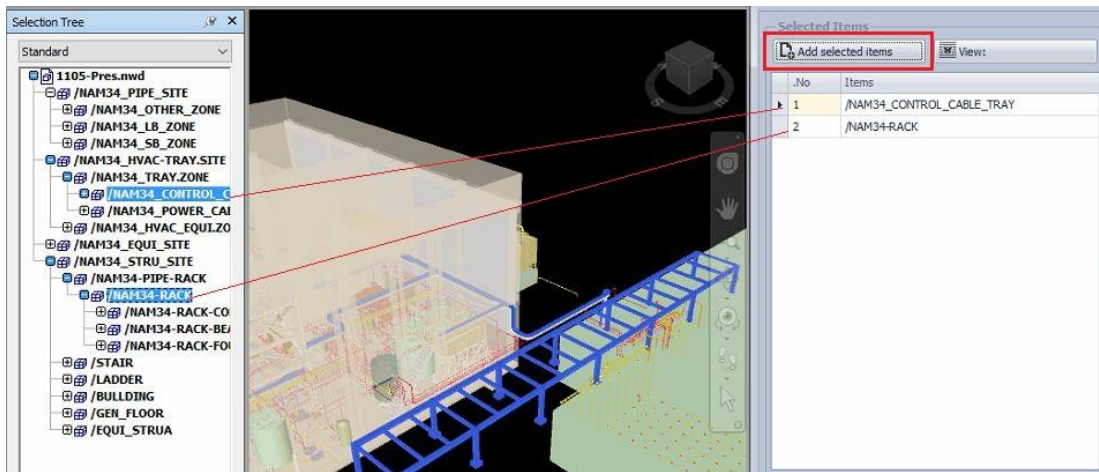
Select an item from the Export List to zoom into that item in the 3D viewer window.
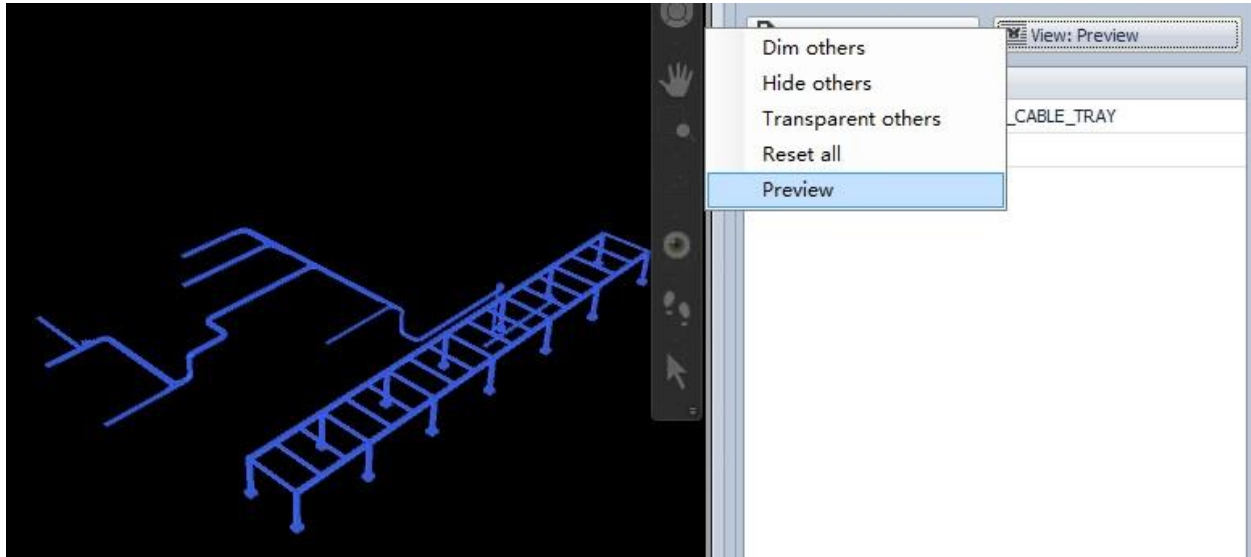
Clicking on an item from the export list will allow you to customize the specific options for that item.

In order to customize settings, click on [View: Preview] to view the additional settings.
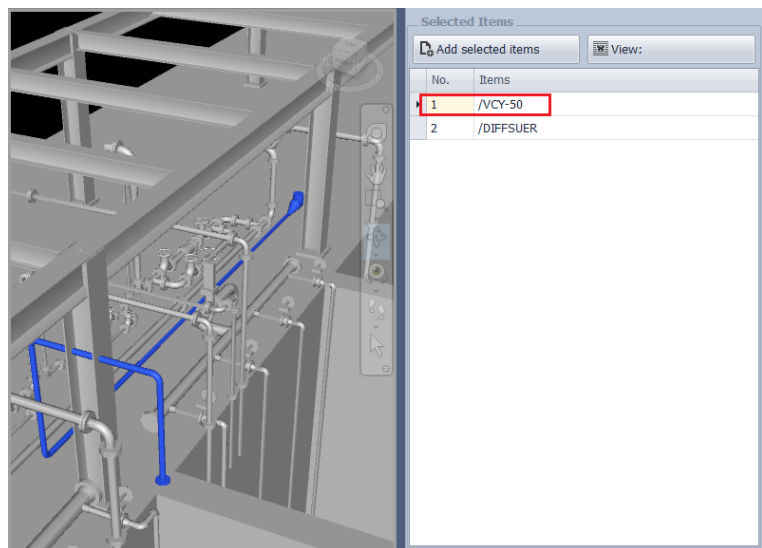

View: Preview Settings Options

- Dim others: Dim all other items besides the selected items.
- Hide others: Hide all other items besides the selected items.
- Transparent others: Set all other items besides the selected items to be transparent.
- Reset all: Remove selected options to rest to default and show all items in the model.
- Preview: Preview how the selected items will be shown in the output file

Export PDF:

When preparing to export the PDF, there are two main options depending on whether you need to export as a single PDF file or a PDF file for each individual item:

Users can export all the items in the Export List into a single PDF file by setting the slider to **"Single"** and entering the PDF file name.
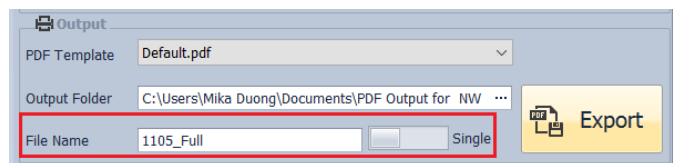
Additionally, the program can export each individual item in the Export List to an Individual PDF. In order to export multiple PDFs, set the slider to **"Multiple"** and then enter the file name for each item's Individual PDF next to each item on the Left.
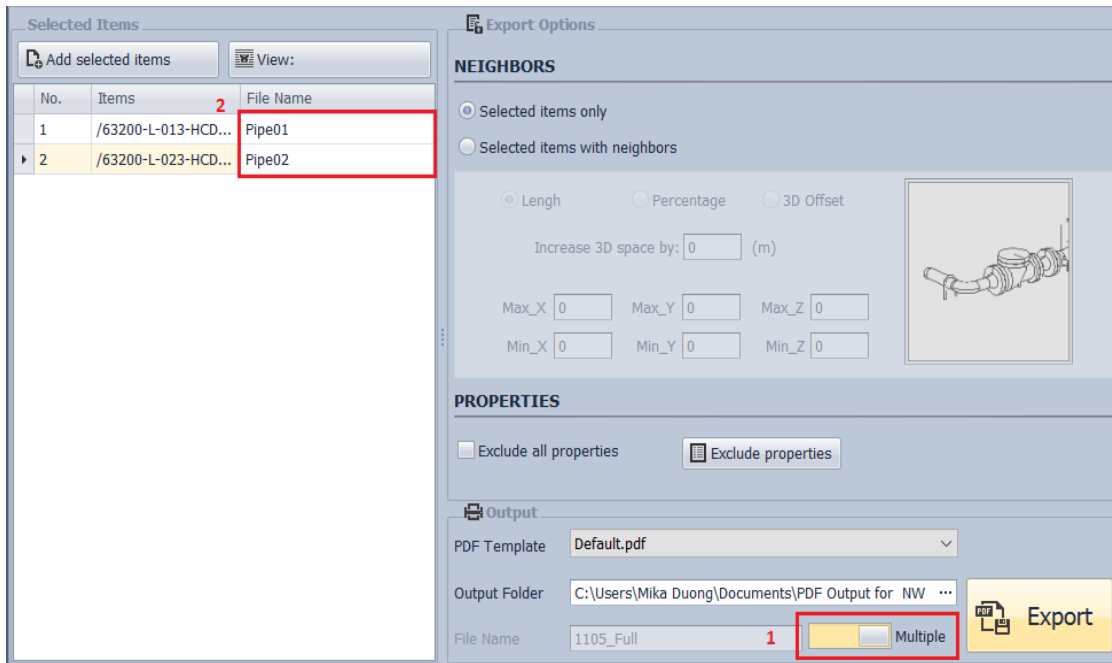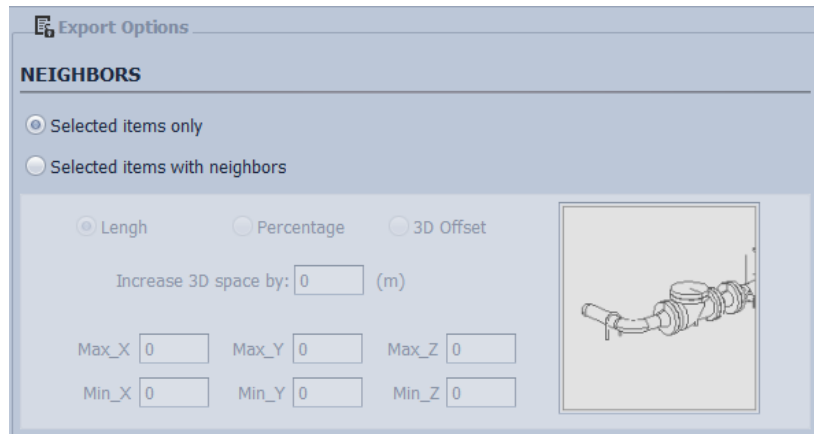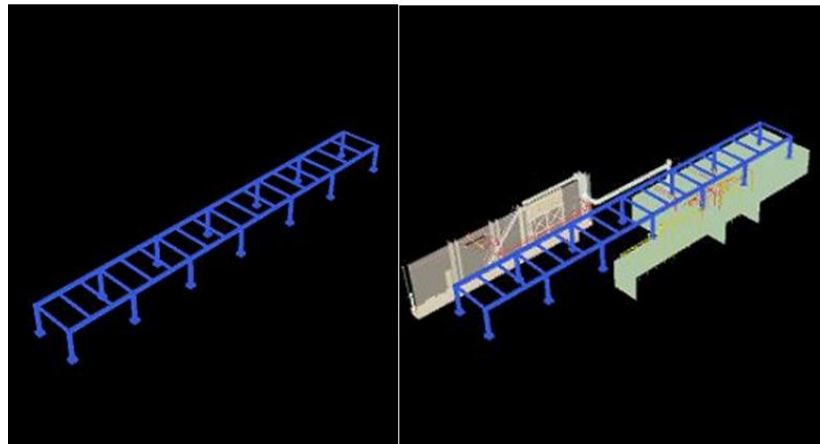
Customize Export Options:

Select items with neighbors:
Selecting this function allows you to extend the selected items' box and export all items in that extended box.

Set an Input value to extend to according to either length, percentage or 3D offset.

The resulting image will include the neighbors within the parameters set above and will be displayed like this:


No neighbor   With neighbors

Exclude Properties:
To change the exported properties, select **"Exclude Properties"**

Selecting **"Exclude all Properties"** will result in the exported file to not include any of the properties of the exported items.

If you want to exclude certain properties, check the properties you would like to be excluded. For example, in the displayed image **Type, Lock, and Bore** would be excluded (other unselected items would be included).
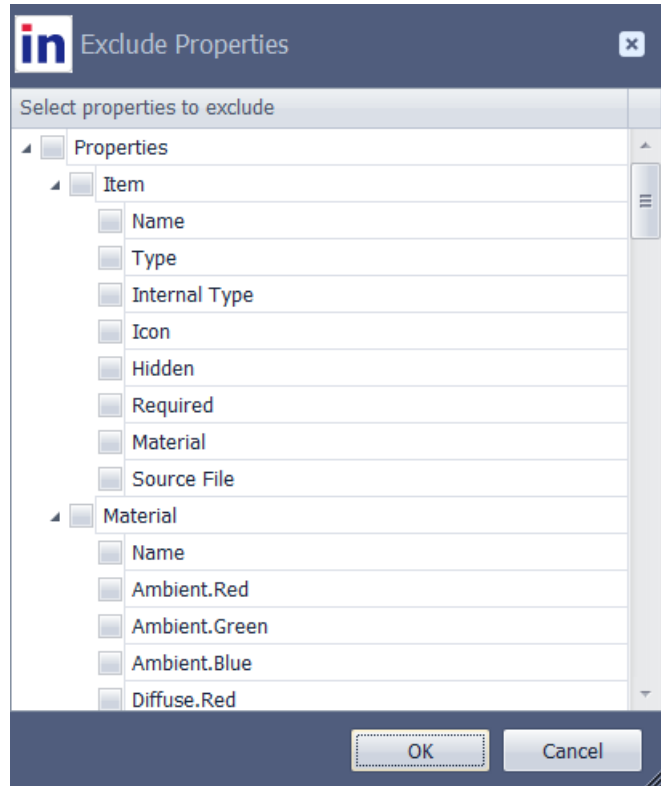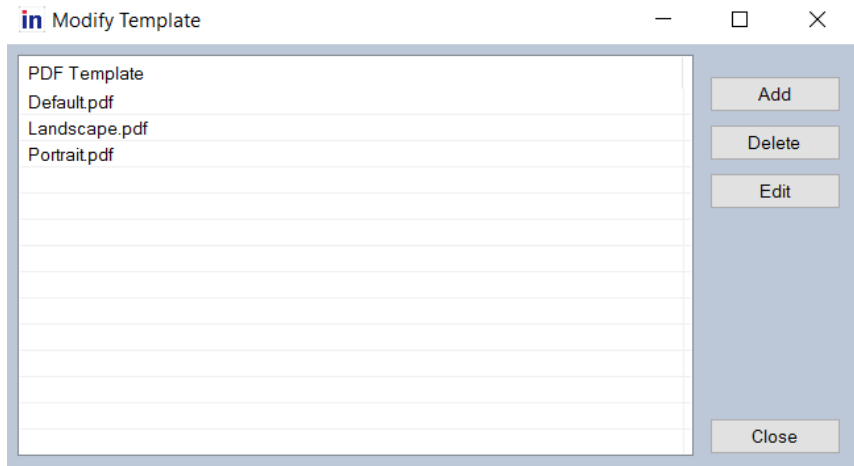

PDF Template

If you would like to use a special template for your exported file, please select the desired PDF Template from the drop-down menu.
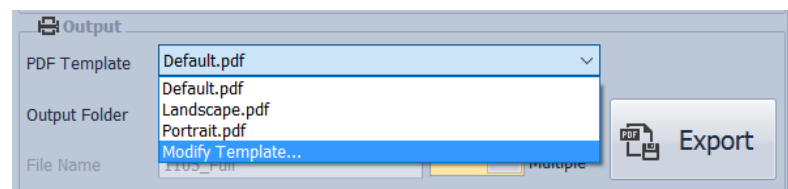
Modify PDF Template

*(Note: Only Acrobat Reader Pro users can edit templates.)*

Additionally, custom templates can be created and modified from within the program. After clicking "Modify Template" options to add, create, or edit existing templates will be displayed.

After selecting "edit" and the desired PDF template, the adjacent window will be displayed.
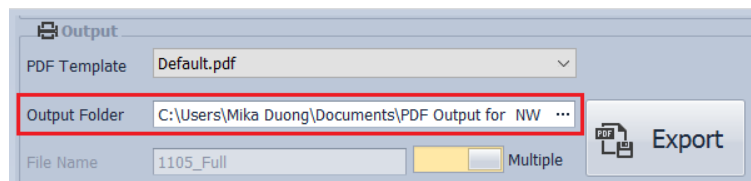
At the top, the selected template file name will be displayed.

In the middle section, settings can be edited that will be reflected in the final output file. Click on the value section to edit the desired value.
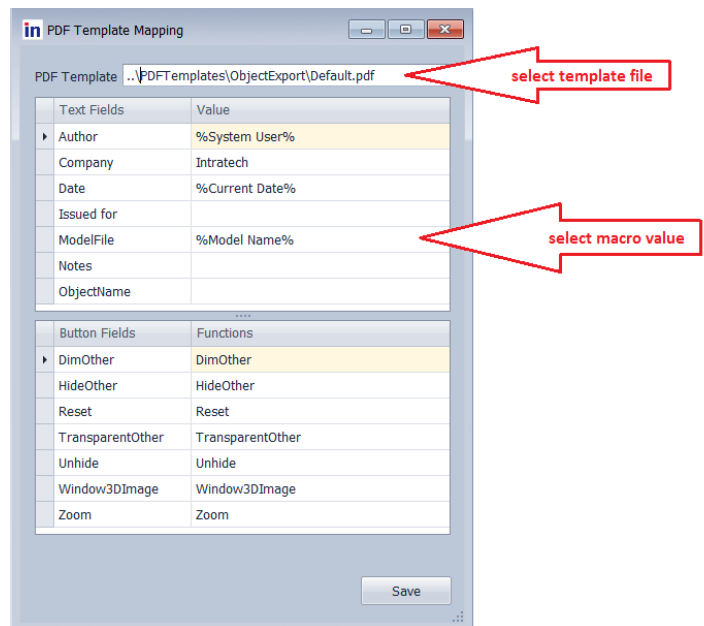
Output settings

Select the desired output folder for your file. If all the settings are correct, click the Export button to export the completed PDF File.

Clash Exporter

Export Selected clashes

After selecting Export selected clashes, the results from clash tests and the clash items will be displayed.

If a new clash test was performed in Navisworks, select "Reload clashes" to update the Clash Report export list. The right side menu displays the results of different clash tests. You can select the test you would like to export the clashes from the list by checking it.
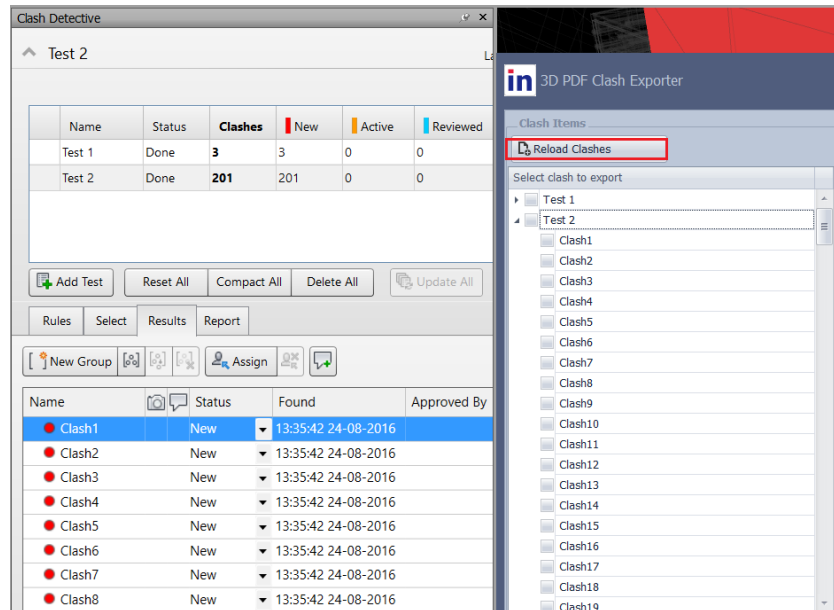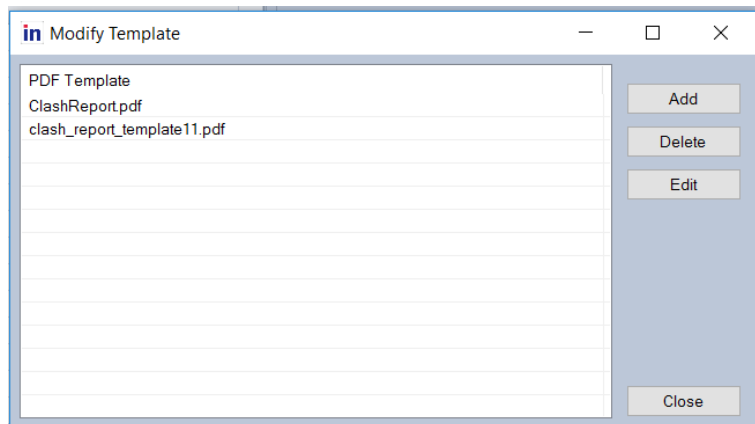
When the desired items are displayed, click export to easily export your Clash Report.

PDF Template

Clash Reports also have the option to use customized PDF Templates.
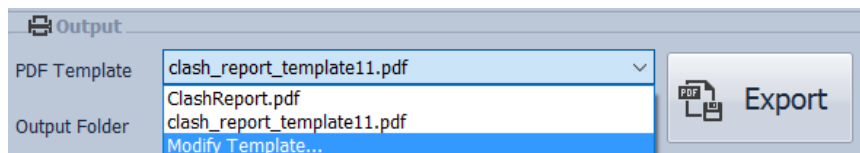
Users can add, delete and edit Clash Report Templates with the Modify Template options. These settings can be changed to customize what will be reported in the Clash Report.

In Modify Template form, the program will list up the sample template and all template was used.

User can select a template to delete or edit

Besides, a new template can be added by import PDF template file and enter the value by manual or select macro value
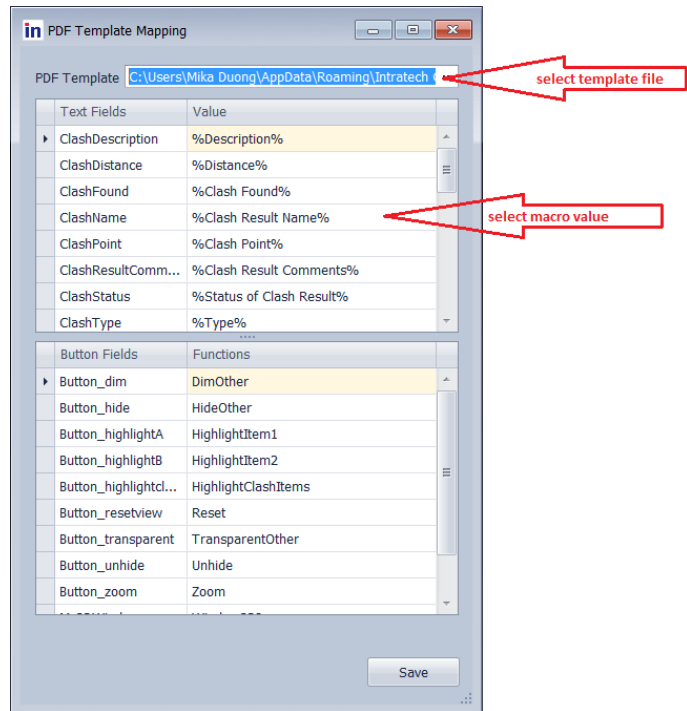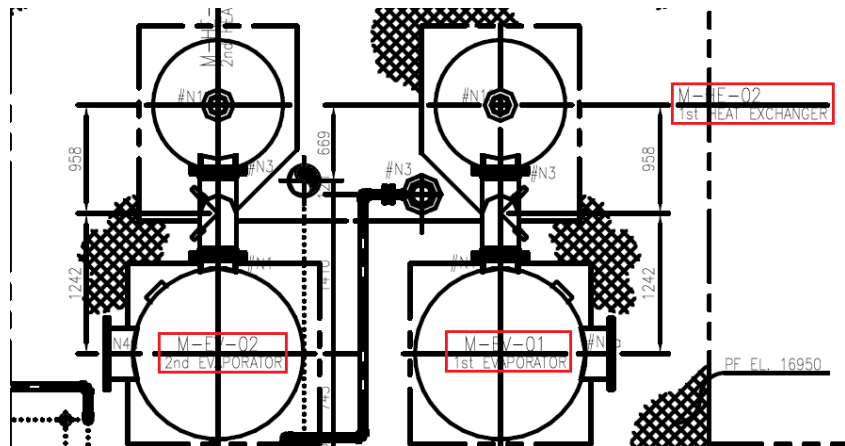
GA Exporter

Each model loaded within Navisworks can have accompanying General Arrangement drawings (GA drawings).
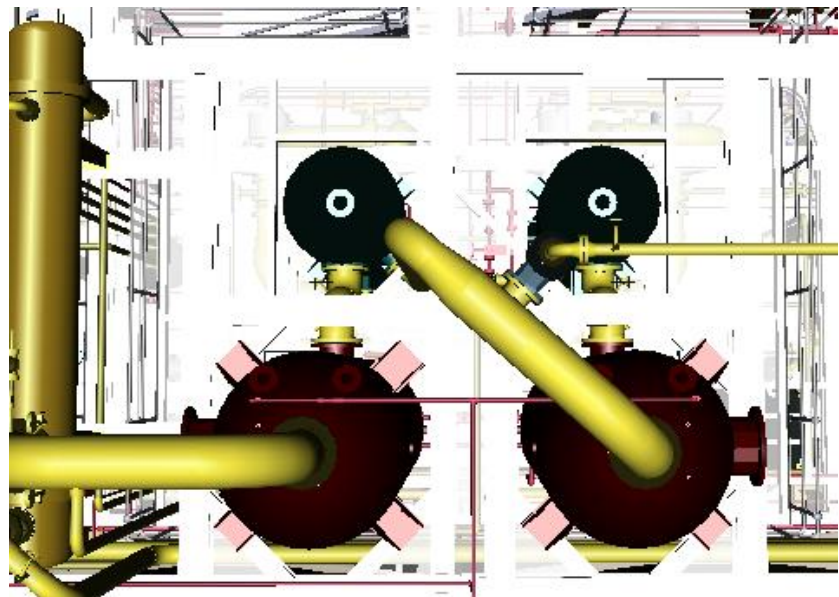
These drawings can display the dimensions of one or multiple objects and can are viewed as 2D drawings from a top-down view, side-view, and front-view.
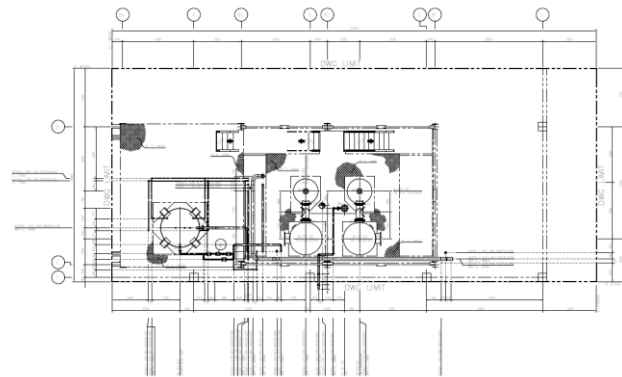
When looking at a zoomed into a GA drawing, the Tag numbers of Equipment or Pipelines can be seen adjacent to the relevant equipment.
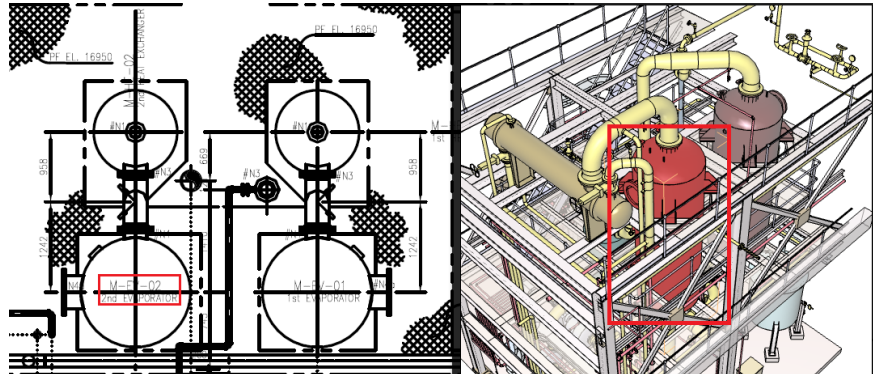

In the 3D model view, the equipment would be displayed like this:

Using the 3D PDF Exporter for Navisworks allows you to link one 3D object with the specific Tag No from a 2D Drawing.

In the resulting 3D PDF, clicking on the Tag in 2D will then zoom in and display the relevant 3D image.

For example, by clicking "M-EV-02", this 3D object will be displayed.

Setting Mapping rules between 2D Tags and 3D Objects in NW

Using these settings will define the mapping rules for several design models, including Revit, PDMS and PDS. The current version of the GA export function creates a hyperlink for two item types (Piping and Equipment).

The default location of the Mapping file is C:\Program Files\Autodesk\Navisworks Manage 2014\Plugins\Intratech.3DAPPs.PDFExporter\MappingRules.xml

The mapping rules will be different depending on the model type.

```xml
<GA>
    <Model name="REVIT" att="Element">
    <Model name="PDMS" att="PDMS">
        <discipline name="EQUIPMENT">
    1       <identifier att="PDMS" prop="Type" value ="EQUI"/>
    2       <tagno att="Item" prop="Name"/>
        </discipline>
        <discipline name="PIPING">
            <identifier att="PDMS" prop="Type" value ="PIPE"/>
            <tagno att="Item" prop="Name"/>
        </discipline>
    </Model>
    <Model name="PDS" att="PDS Component Data">
    <Model name="SP3D" att="SP3D Common">
```
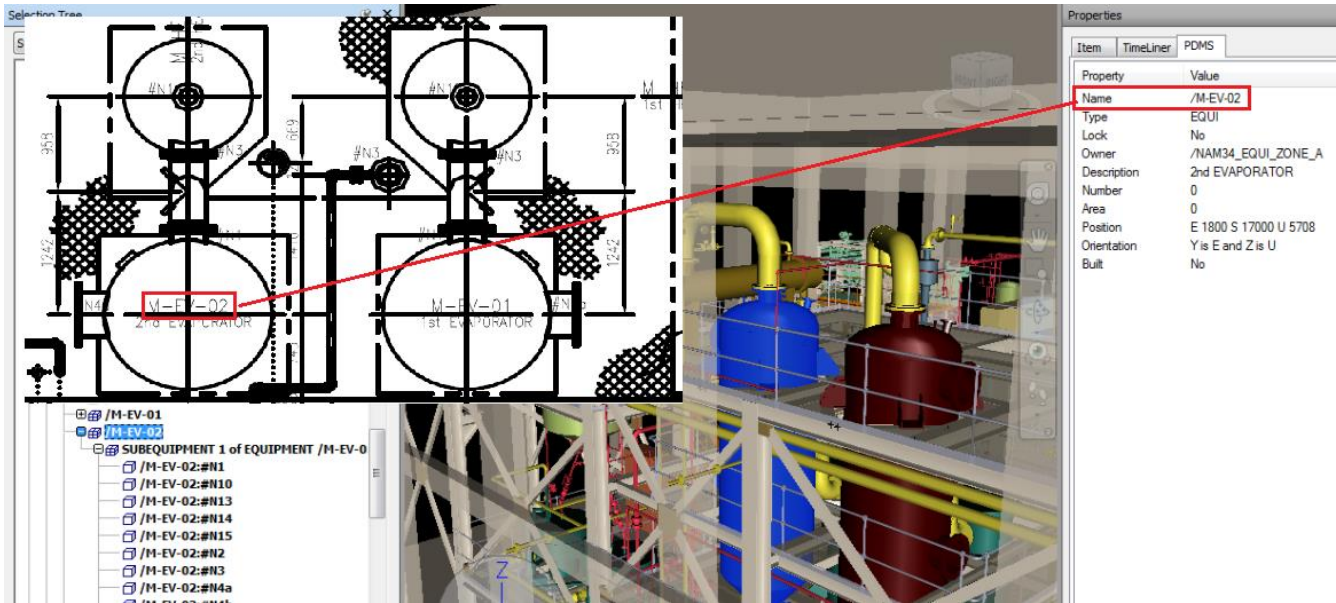
Using the 1st line <identifier>, the program will search all object that have same EQUI type in the PDMS attributes.

Using the 2nd line <tagno>, the program will compare the value within the Name properties of EQUI objects and the tags in 2D drawing.

If the values match, the program will automatically create a link between the two. If they are same, a link will be created automatically.
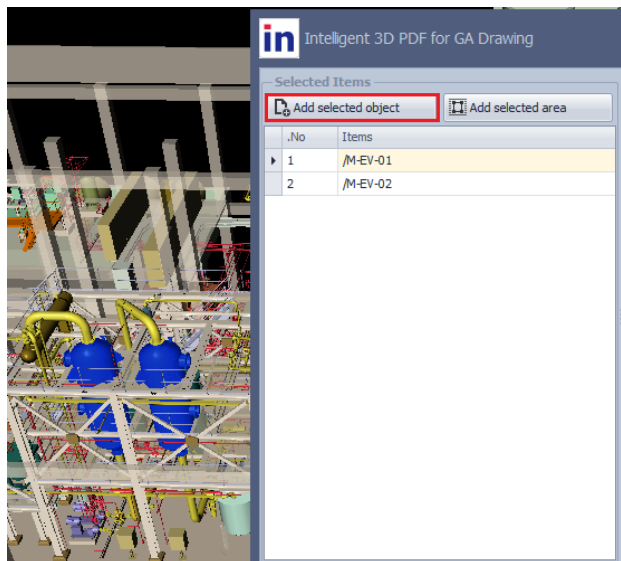

Add selected objects:

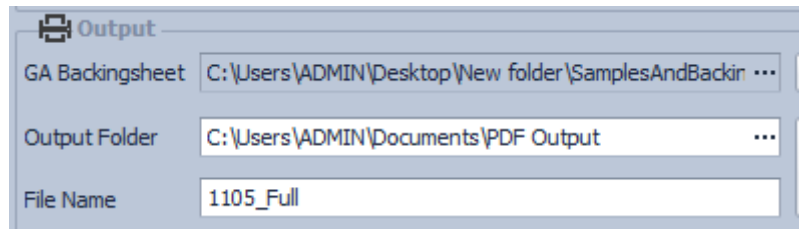The functionality here is similar to Object Exporter.

You can choose Items from the "Selection Tree" or from 3D viewer itself.
After selecting an object(s), click the "Add selected Object" to add all the selected items to your export list.

All selected items will be added in the export list

To select the appropriate GA drawings to map with these objects, first select the output folder. Next, enter the file name and click the "Export" button to finish.

All of the files will relevant files will be exported into a single PDF File.


Add selected areas:

This function allows you to select an area of items for Export. You can select this area of items by creating a rectangular box around the desired items.

First, select the "Add Selected Area" button.

Next, in the 3D viewer of Naviswork, draw the box around the desired section by selecting two points.

Set a min point and a max point and then the program will create a box around the two points.

Press "Enter" key to add this box to the list. The default name setting will be "Box 1" and continue as more areas are added.
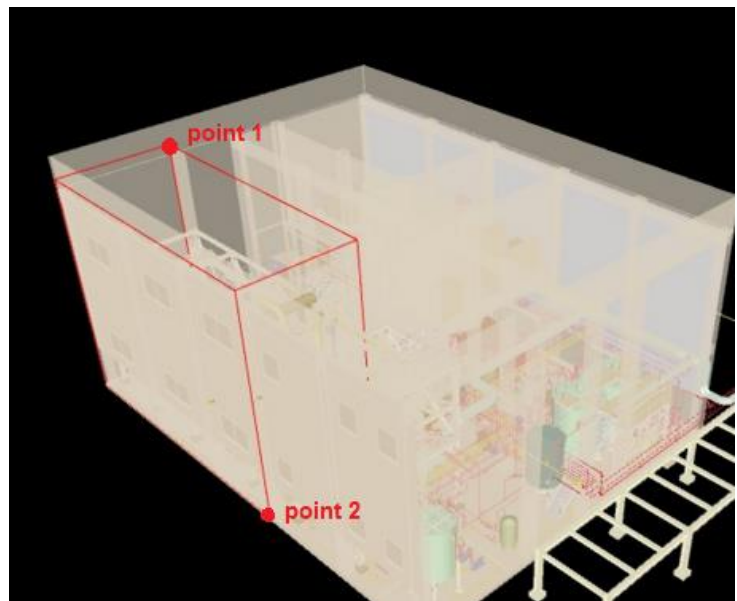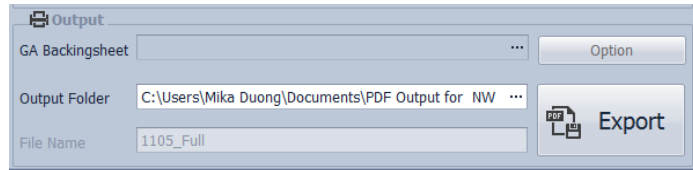
Clicking on "Box 1" will display the created box in the 3D viewer.

Note: You need to select an area which contains 3D objects for those that you intend to link with Tags in 2D backing sheet.
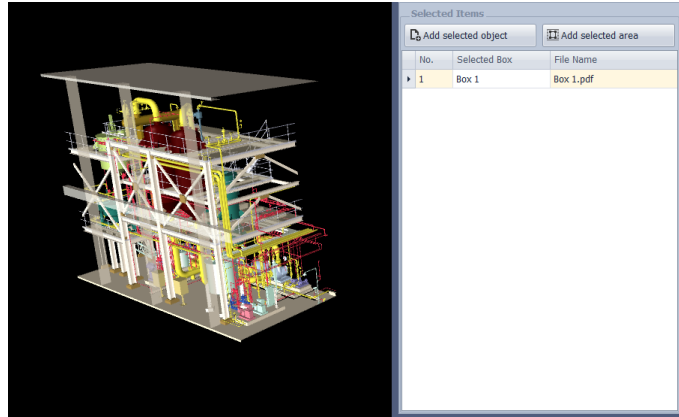
When ready to export, select the GA drawing for this area. Then enter the file name of the output PDF file and click "Export" to finish.

ISO Exporter

This function allows you to combines ISO drawings with their corresponding 3D pipeline sections into a 3D PDF file.

Requirements to use this function:
1. The Backing sheet folder must contain ISO drawings.
2. For automatic ISO drawing 3D PDF, the ISO drawing name needs to match the properties specified in the mapping rule.

## Mapping ISO drawing with 3D object:

The default location for the mapping file for making hyperlinks is located in *C:\ProgramFiles\Autodesk\NavisworksManage2014\Plugins\Intratech.3DAPPs.PDFExporter\MappingRules.xml*

By checking the <ISO> Section, you can define the link between ISO drawing and 3D Pipelines.

```xml
<ISO>
    <Model name="PDMS" att="PDMS">
            <discipline name="PIPING">
                    <identifier att="PDMS" prop="Type" value ="PIPE"/>
                    <tagno att="PDMS" prop=":LINENO"/>
            </discipline>
    </Model>
    <Model name="PDS" att="PDS Component Data">
    <Model name="REVIT" att="Element">
</ISO>
```

PDMS models: The ISO drawing's file name will be mapped according to the LINENO property of the 3D objects.

If the ISO drawing's file name is the same as the property "LINENO" of an object within the 3d model, a link will be created automatically.
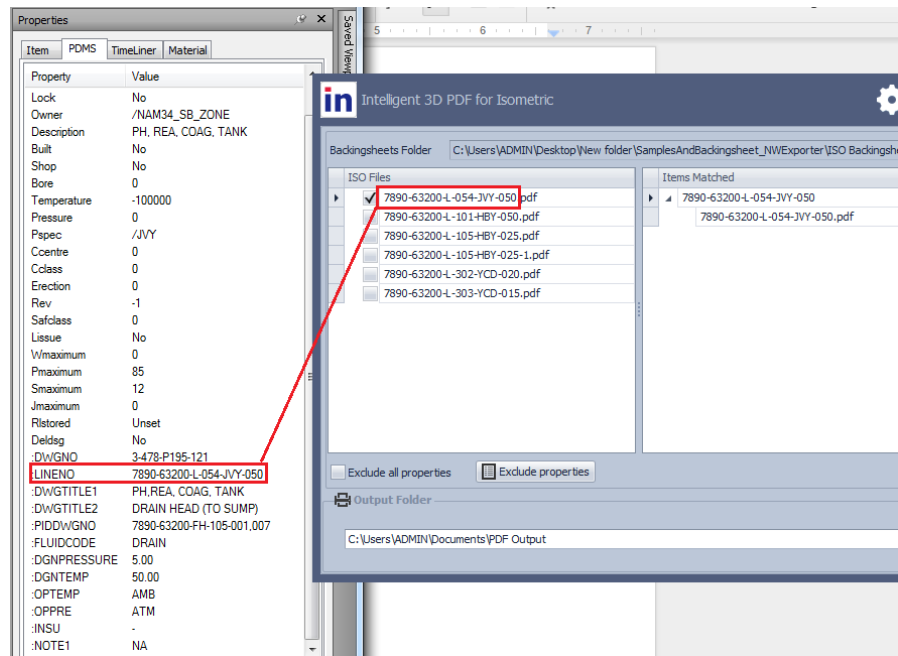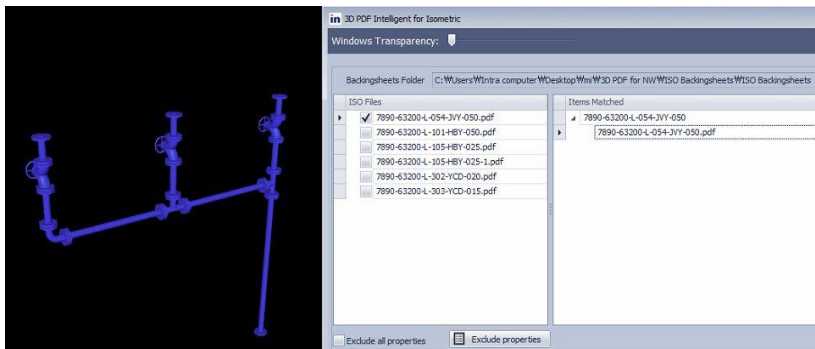
Creating ISO drawings in 3D PDF

Select the folder that contains the relevant ISO Drawings. After selected the folder, the ISO files will be listed in the ISO files field on the left.
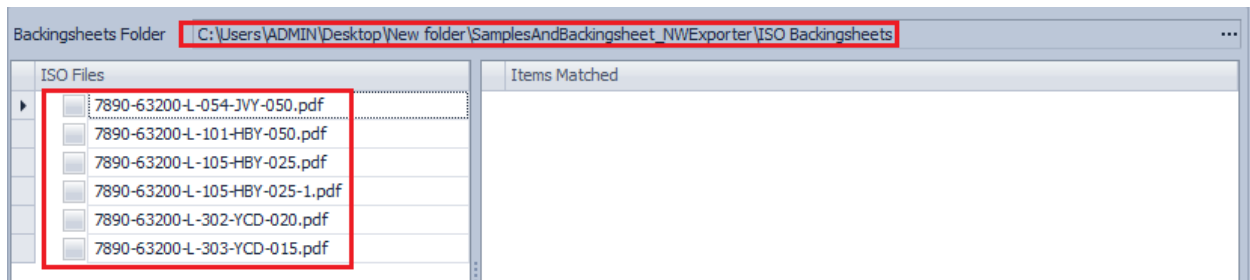
When clicking on the loaded ISO drawing, the program will automatically search corresponding pipelines to create a direct link.
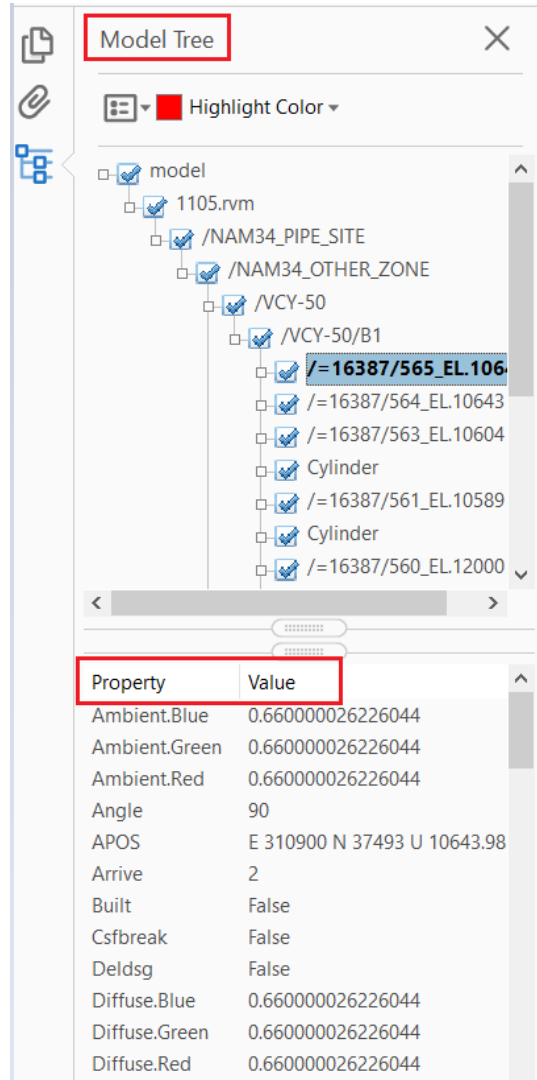
After checking and correctly matching all ISO drawings and 3D Pipelines, click Export.
The resulting files will be displayed as below:
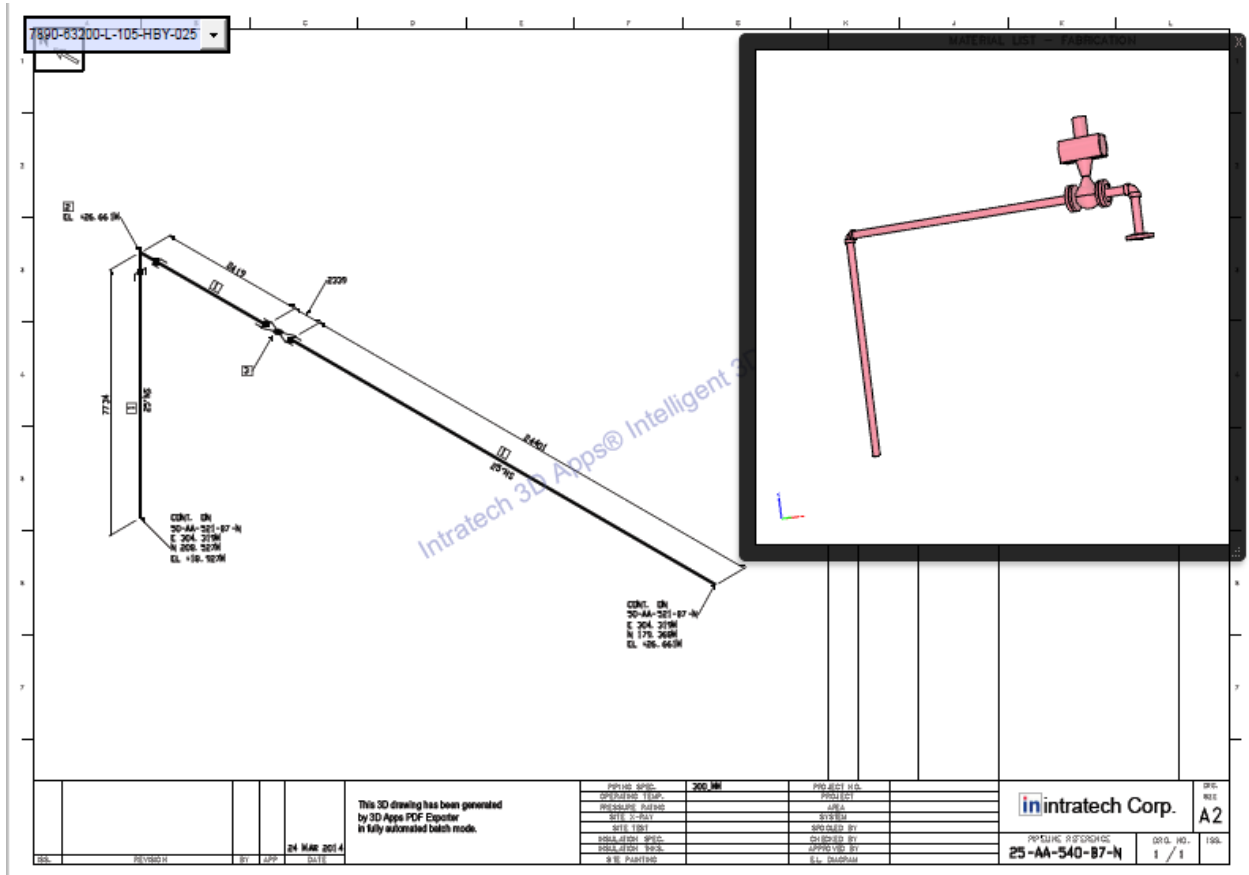
3D PDF output file

The top section will show the Hierarchy of the exported model. To navigate to that section of the 3D PDF, simply click on the item from the model tree.
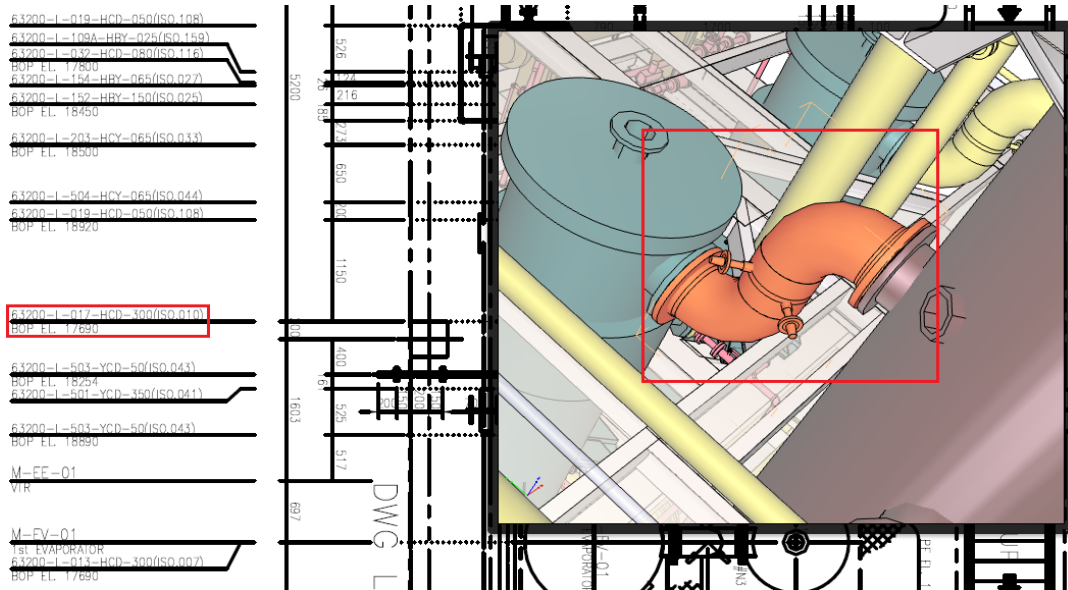
Additionally, clicking on a node will show the properties of that specific note. This will be included if selected during exporting.
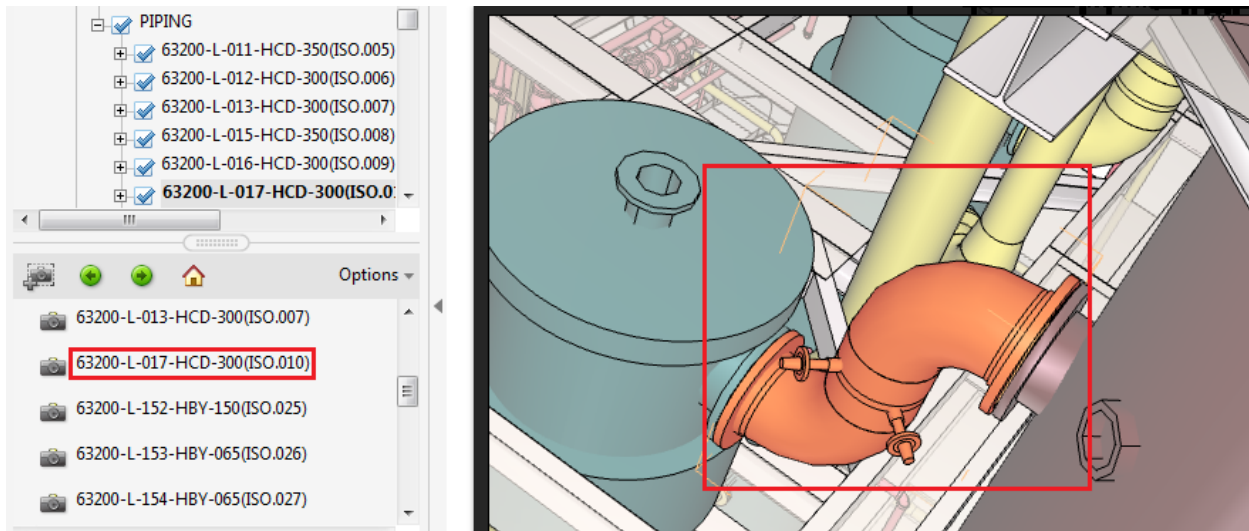
2D-3D Links

Setting 2D-3D links is currently only supported with GA Exporter.

Select a 2D link in the drawing to zoom into that object in the 3D viewer.

Alternatively, click on the 2D link from the list to display the 3D image.

Foreign Language Compatibility

By default, all languages besides English are not supported in Acrobat Reader. If you are using a language besides English in the model, please download the relevant language pack from the Acrobat website.

Settings

- **Exclude Hidden Objects**: Set to "On" to not export objects that were hidden in 3D view.
- **3D Content Format**: this option allows you to set the outputted PDF format.
  > Note: BlueBeam Vu reader can open only U3D format and fixed viewport PDF files.

  > To read in BlueBeam Vu,
  > - Convert to U3D
  > - Export with fixed viewport.
  > - Do not combine 2D & 3D

- **Model render mode**: Use the drop-down menu to select the render style for exported objects in PDF files.
- **Light scheme**: Select the light mode for exported objects in PDF file.
- **Background color**: Set color for the background of the PDF file.
- **Show toolbar**: Set to "On" to set whether the toolbar is shown when opening the output file.
- **Open model tree**: Check this box to set if the model tree is shown when opening the output file.
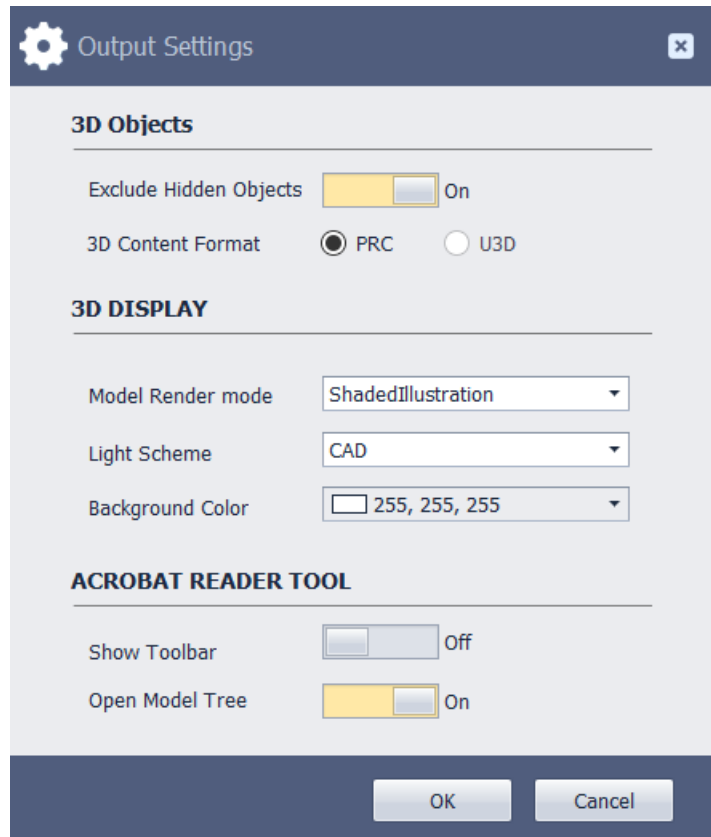
About

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