

MagicDraw Model-Tool-Interchange User's Guide

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Colophon

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1. Introduction

MagicDraw is a modeling tool developed by No Magic. More information on this tool can be found at: <https://www.nomagic.com/products/magicdraw> Future Airborne Capability Environment (FACE®) is a consortium developed standard. More information on this standard can be found at: <https://www.opengroup.org/face> This document provides information on the installation and use of the following plugins running within MagicDraw:

- FACE 3.0 MagicDraw Model-Tool-Interchange Plugin
- FACE 3.1/3.2 MagicDraw Model-Tool-Interchange Plugin

Note: "Model-Tool-Interchange Plugin" is synonymous with "Import/Export Plugin".

Note: An * will be used when the version number is referenced that applies to any version of the plugin.

Note: The "Model-Tool-Interchange Plugin" is delivered via a zip file. The zip file could contain a single version (i.e. 3.0 or 3.1/3.2), or it could contain all versions (i.e. 3.0 and 3.1/3.2). In either case, the installation process is very similar. It should be noted that you only need to install the version (3.0 or 3.1/3.2) that you will be using. Also, both versions can be installed simultaneously without causing any issues.

The plugins perform two functions as follows:

- Import an Extensible Markup Language (XML) Metadata Interchange (XMI) file (i.e. .face file) into an MagicDraw model
- Export an MagicDraw model to XMI file (i.e. .face file)

The FACE Technical Standard Edition defines the meta-model and XMI schema that are used to create MagicDraw data models and XMI files. These documents can be found at: <https://prod.opengroup.org/face/docsandtools>

2. FACE 3.* MagicDraw Model-Tool-Interchange Plugin Setup

This section describes the steps necessary to setup the FACE MagicDraw Model-Tool-Interchange Plugin.

2.1. Prerequisites

The prerequisites for the FACE 3.* MagicDraw Model-Tool-Interchange Plugin Setup follow:

- MagicDraw/Cameo version 2021, 2022, or 2024

2.2. Installation

Installation for each of these sections will start in the MagicDraw installation directory (C:\Program Files\MagicDraw or C:\Program Files\Cameo Systems Modeler by default).

These instructions are based off the plugin installation directions found here: <https://docs.nomagic.com/display/NMDOC/Installing+plugins>

If you do not have admin access to your machine, you can install the plugin in an alternative location the user defines such as C:\Users\<username>\AppData\Local\.magicdraw<version> To get the exact path to the configuration files follow the instructions below:

- Open the help menu and select About MagicDraw.
- From the Help menu, select About MagicDraw. The About screen opens.
- Click the Environment tab.
- Click the hyperlink next to Configuration files. The folder containing MagicDraw configuration files opens.

Additional information can be found here: <https://docs.nomagic.com/display/MD185/Plugins+directories>

2.2.1. Install Plugin

To install the FACE MagicDraw Model-Tool-Interchange open the plugin directory in the MagicDraw installation directory (e.g C:\Program Files\MagicDraw by default) or Cameo (e.g. C:\Program

Files\Cameo Systems Modeler by default) and copy the FACE 3.* MagicDraw Model-Tool-Interchange Plugin (i.e. edu.vanderbilt.isis.bns.md_v30 or edu.vanderbilt.isis.bns.md_v31) into this directory. This is simply copying a directory and all its contents to the plugins directory in the MagicDraw/Cameo installation.

To clarify what should be copied, an example for FACE 31 with Cameo installed in “Program Files” follows:

Copy From the Zip File: edu.vanderbilt.isis.bns.md_v31

Copy To: C:\Program Files\Cameo Systems Modeler\plugins

See Figure [Plugins Install Directory](#) for an example of the plugins directory. Note - You would normally have only one version (3.0 or 3.1/3.2) of the plugin installed; however, both versions can coexist in the same installation.

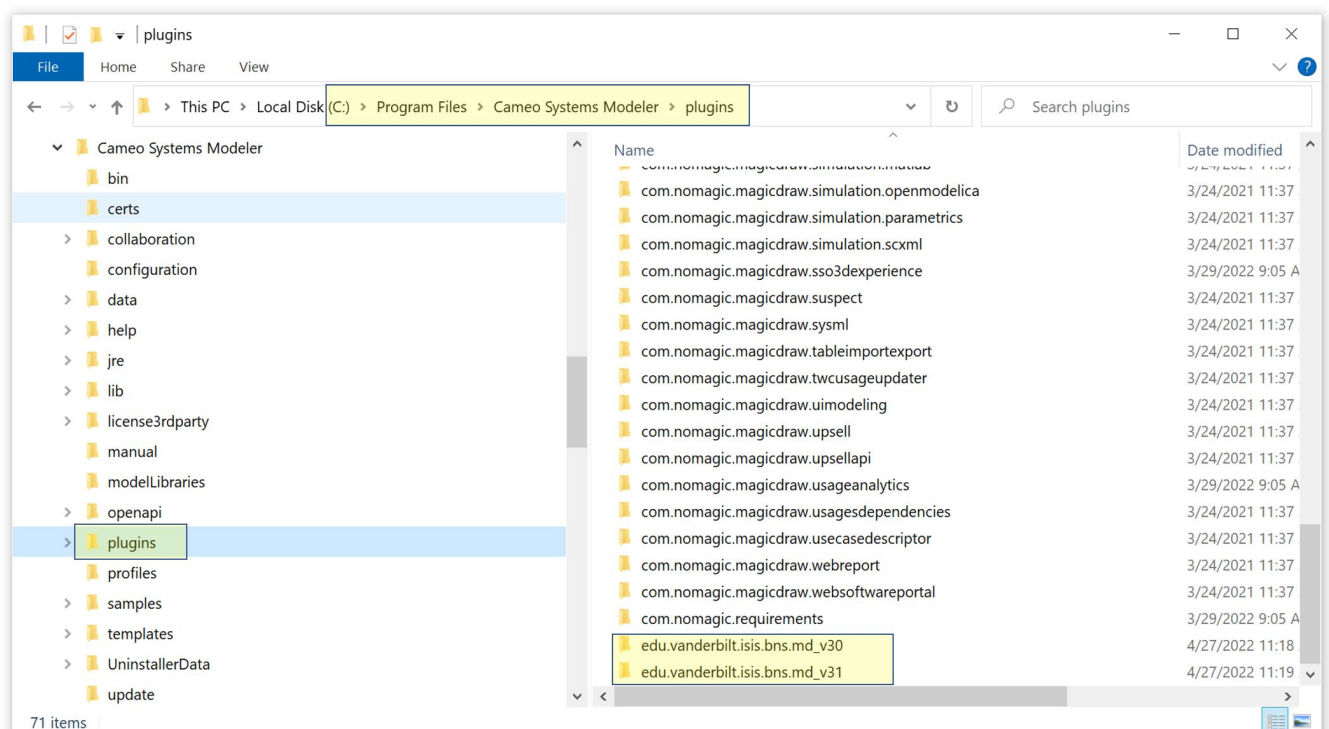


Figure 1. Plugins Install Directory

2.2.2. Install Profile

Within the plugin package is a directory called "profile" which contain the following based on the plugin version:

- FACE 3.0 Plugin
 - FACE_3.0_Unified_Profile_Customizations_v1.mdzip
 - FACE_3.0_Unified_Profile_v1.mdzip
- FACE 3.1 Plugin
 - FACE_3.1_Unified_Profile_Customizations_v1.mdzip
 - FACE_3.1_Unified_Profile_v1.mdzip

Note - The 3.1 profile is used for both 3.1 and 3.2.

These files need to be copied into the profile folder of the MagicDraw/Cameo installation directory (e.g. C:\Program Files\MagicDraw by default).

See Figure [Profiles Install Directory](#) for an example of the profiles directory. Note - You would normally have only one version (3.0 or 3.1/3.2) of the profiles installed; however, both versions can coexist in the same installation.

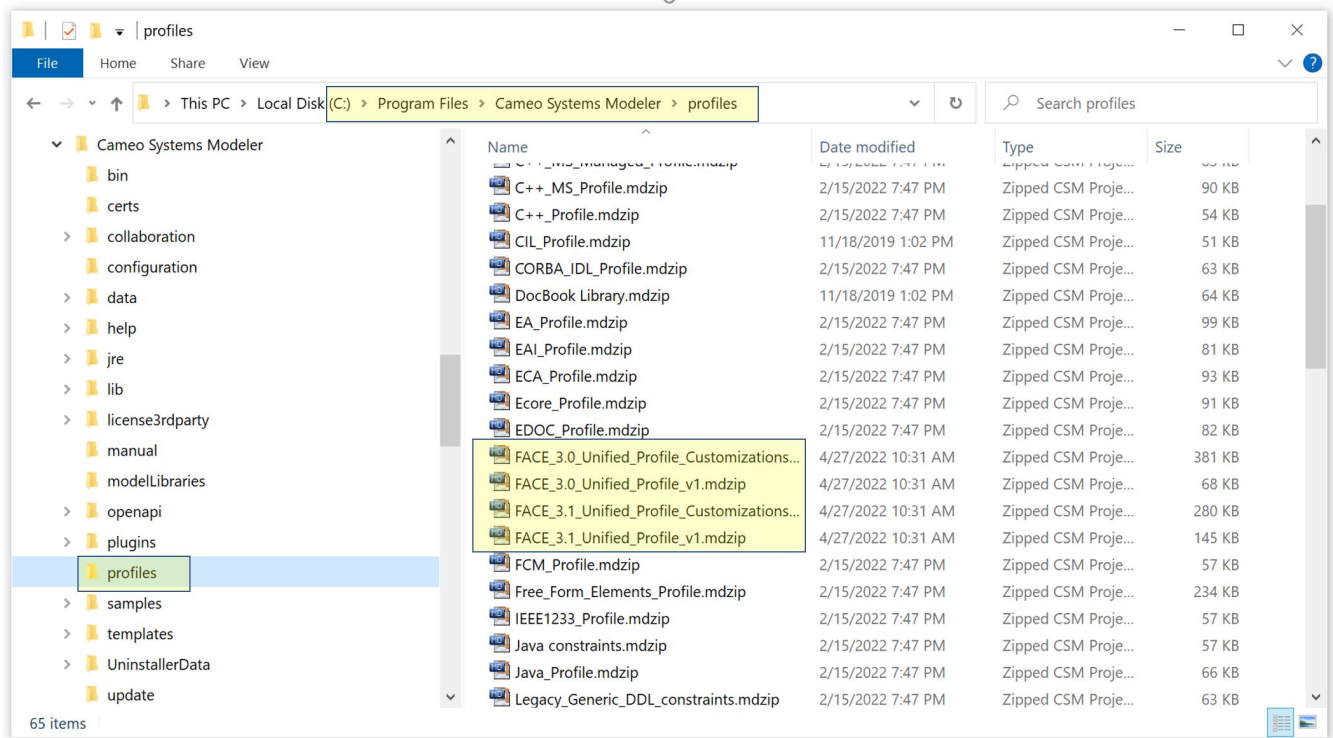


Figure 2. Profiles Install Directory

2.2.3. Setting Up Custom Diagrams

Begin by opening MagicDraw and selecting "Diagrams" in the tool bar. Navigate to Customize; you may need to expand the menu to see this option.

Now select "Import" and navigate to the FACE 3.* MagicDraw Model-Tool-Interchange Plugin installation directory (C:\Program Files\MagicDraw\plugins\edu.vanderbilt.isis.bns.md_v3* by default) then open the diagrams folder. You will need to import each of these diagrams for the full functionality of the tools and models be accessed.

Once you have completed this process the custom diagrams should have each of the following entries:

- FACE 3.0 Plugin
 - FACE Architecture Model Diagram
 - FACE Conceptual Data Model Diagram
 - FACE Data Model Diagram
 - FACE Integration Context Diagram

- FACE Integration Model Diagram
- FACE Logical Data Model Diagram
- FACE Platform Data Model Diagram
- FACE Traceability Model Diagram
- FACE UoP Model Diagram
- FACE 3.1/3.2 Plugin
 - FACE 3.1 Architecture Model Diagram
 - FACE 3.1 Conceptual Data Model Diagram
 - FACE 3.1 Data Model Diagram
 - FACE 3.1 Integration Context Diagram
 - FACE 3.1 Integration Model Diagram
 - FACE 3.1 Logical Data Model Diagram
 - FACE 3.1 Platform Data Model Diagram
 - FACE 3.1 Traceability Model Diagram
 - FACE 3.1 UoP Model Diagram

Note - The diagrams for 3.1 are used for 3.2.

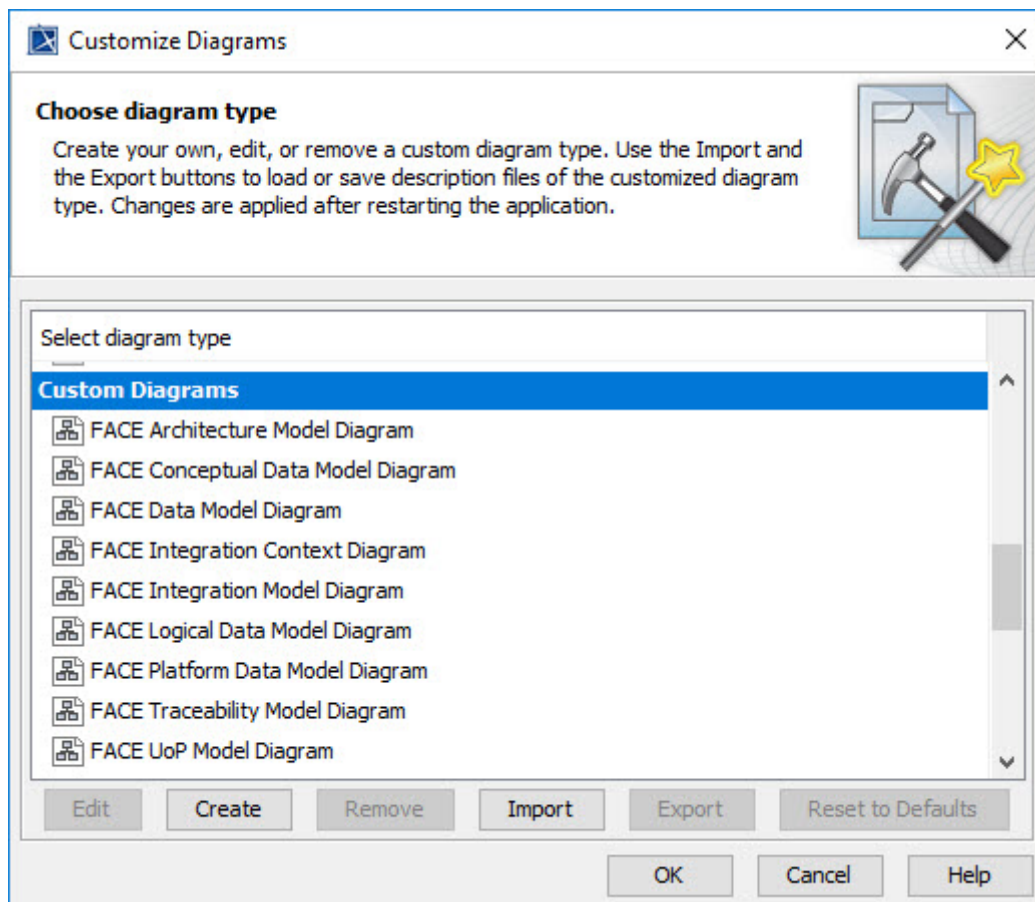


Figure 3. Loading Custom Diagrams for FACE

2.3. Configuration

2.3.1. Profile Identification

Normally, there is no need to make configuration changes for identifying the FACE profile used by your model. This is especially true when starting with the [Starter Model](#). However, there are cases where configuration changes would be needed. First, we will discuss the configuration edits that are possible, and then describe when configuration edits are needed.

MTIConfig.xml as Delivered with the MTI

The file “config\MTIConfig.xml” has the following section:

```
<ProfileNames>
<ProfileName NameContains="FACE"/>
</ProfileNames>
```

The attribute "NameContains" is used to identify the profile used by your MD/Cameo model. The profile contains the FACE stereotypes.

For the example above, the MTI will select stereotypes from profiles that have a name that contains the string “FACE” (case insensitive). The profile delivered with the MTI for FACE 3.1 has the name “FACE_3.1_Unified_Profile_v1”, which is contained in “FACE_3.1_Unified_Profile_v1.mdzip”. The file naming is similar for FACE 3.0. Notice that the name of the mdzip does not matter. The name of the profile internal to the .mdzip model does matter. In this example, both names are the same.

As delivered, the MTI would search for stereotypes in your MD/Cameo model that contain the string “FACE”; and thus, typically no configuration changes would be needed.

MTIConfig.xml Needed Edits

As mentioned in the as-delivered configuration description, the MTI would search for profile names that contain the string “FACE”. This would be a problem under the following circumstances:

Unintended Matches with the Default String

If your MD/Cameo model referenced the following profiles:

```
FACE_3.1_Unified_Profile_v1
Surface_to_Air_Profile
```

then the search string “FACE” would find both profiles. If the profiles had one or more stereotypes named the same, then the MTI would throw an exception.

To remedy this problem, change "config\MTIConfig.xml" as follows:

WAS:

```
<ProfileName NameContains="FACE"/>
```

NOW:

```
<ProfileName NameContains="FACE_3.1_Unified_Profile"/>
```


Multiple FACE Profile Models

You do not have to use the “FACE_3.1_Unified_Profile_v1” profile. You could create your own profile(s). It should be noted that if you create your own profile, you would lose the customizations that make creating FACE models much easier.

For example, if you created the following profiles:

UDDL_Profile_v1

FACE_UoP_Integration_Traceability_Profile_v1

then collectively these two profile would represent the FACE profile. For this case, modify MTIConfig.xml as follows:

```
<ProfileNames>
<ProfileName NameContains=" UDDL_Profile "/>
<ProfileName NameContains=" FACE_UoP_Integration_Traceability_Profile "/>
</ProfileNames>
```

Note that there is not a limit on the number of profiles that can be used. The above example could be factored further into more separate profiles.

Erroneous/Malformed MTIConfig.xml

If “config\MTIConfig.xml” is malformed or contains erroneous/incomplete data, then the MTI will default back to use the string “FACE” to search for profiles.

MTI Logging of MTIConfig.xml Use

The use of “config\MTIConfig.xml” is logged when logging is enabled (see [Model-Tool-Interchange Plugin Usage](#) for the UI setting to enable logging). The logging file describes the profile search strings that were used as well as lists the found stereotypes. When in doubt, you should review the log file to understand exactly how the configuration settings are applied.

3. Models

Two Magic Draw models are included with the plugin: FACE30StarterModel.mdzip / FACE31StarterModel.mdzip and "FACE30 MagicDraw Coverage Test Model.mdzip" / "FACE30 MagicDraw Coverage Test Model.mdzip". These models are included to help the user get started modeling quickly and to have an in tool reference for how each element in the profile could be represented.

3.1. Starter Model

The starter model is preconfigured with the profile and customizations needed to model per the FACE Standard. The starter model can be obtained via the About screen as described in a later section or by copying the starter model from the models/starter_model directory in the install zip. Once the MTI is installed, the starter model can be copied from the MagicDraw/Cameo install directory (e.g. C:\Program Files\Cameo Systems

Modeler\plugins\edu.vanderbilt.isis.bns.md_v31\models\starter_model). Typically, you would either open the starter model via the MTI About screen and save the model to another location, or you would copy the model from the zip file or the installed directory and then rename the copied model to a name applicable to your project.

WARNINGS:

- **START WITH THE STARTER MODEL.** The starter model has the profile and customizations necessary to use the MTI; therefore, typically start with the starter model. Creating an empty MagicDraw/Cameo model and trying to import WILL FAIL.
- **RESET Model and Element IDs.** To prevent conflicts when using multiple models that were created from the starter model, reset model and element IDs as described in “FACE®_30_31_32_Guidance_Specific_to_MagicDraw.pdf”. This document is delivered with the MTI.

Note - If you have created your own profile, then you would not use the starter model. Your profile must contain all the MTI FACE profile stereotypes that are used by your MagicDraw/Cameo model. You do not have to create all the FACE stereotypes, just the stereotypes used by your model. The starter model has customizations and diagrams (i.e. tool palettes) that make it easier to create a FACE model. Not using the starter model would forgo those customizations.

3.2. MagicDraw Coverage Test Model.

This model includes examples of how to use each element from the profile to construct a FACEArchitectureModel. This model is not valid, and is only intended demonstrate the correct usage of each UML element within Magic Draw.

This model is also intended to be used as a tool to validate installation of the profile and Model-Tool-Interchange Plugin. You should be able to export and import this model with no errors. You can compare the exported model to the included FACE XMI model (FACE30_ToolingCoverageModel.face) with the plugin package to confirm the export was successful.

4. FACE v3.* MagicDraw Model-Tool-Interchange Plugin Usage

This chapter will discuss the functionality of the FACE v3.* MagicDraw Model-Tool-Interchange Plugin and how to set up a project to take advantage of this capability. Below in [Import/Export GUI](#) is the FACE v3.* MagicDraw Model-Tool-Interchange Plugin interface.

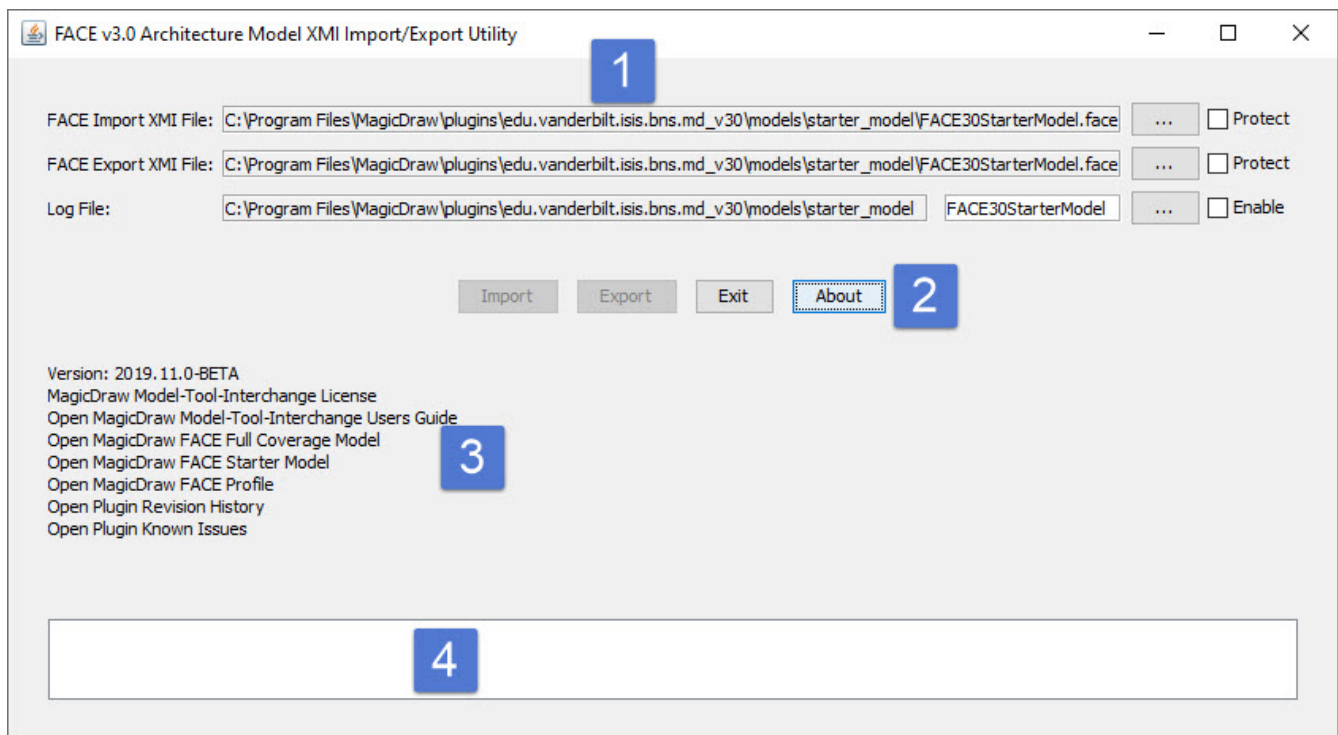


Figure 4. Import/Export GUI

The Plugin has 4 main sections. Section 1 is used to define import, export, and log file paths. This section provides the ability to lock the paths for import and export to prevent accidental name change. You can also enable or disable logging from here as well. Section 2 is used to initiate import or export of a model. These buttons are context sensitive based upon what elements in the containment tab are currently highlighted. The About button opens up the additional options seen in Section 3. These options contain a variety of useful resources for the user. Section 4 is a console feed for that reports the status of an import or export as it is happening.

The plugin can be accessed from any open MagicDraw project once the plugin has been installed as described in Chapter [FACE 3.* MagicDraw Model-Tool-Interchange Plugin Setup](#) by opening the context menu from the Containment Tab within MagicDraw (Figure [FACE Import/Export Architecture Utility](#)).

WARNING – You must select an element in the containment tree (e.g. Model) before right clicking to open the context menu. This indicates the package to import into or export from. Failing to select the containment tree element will result in a pop-up error message.

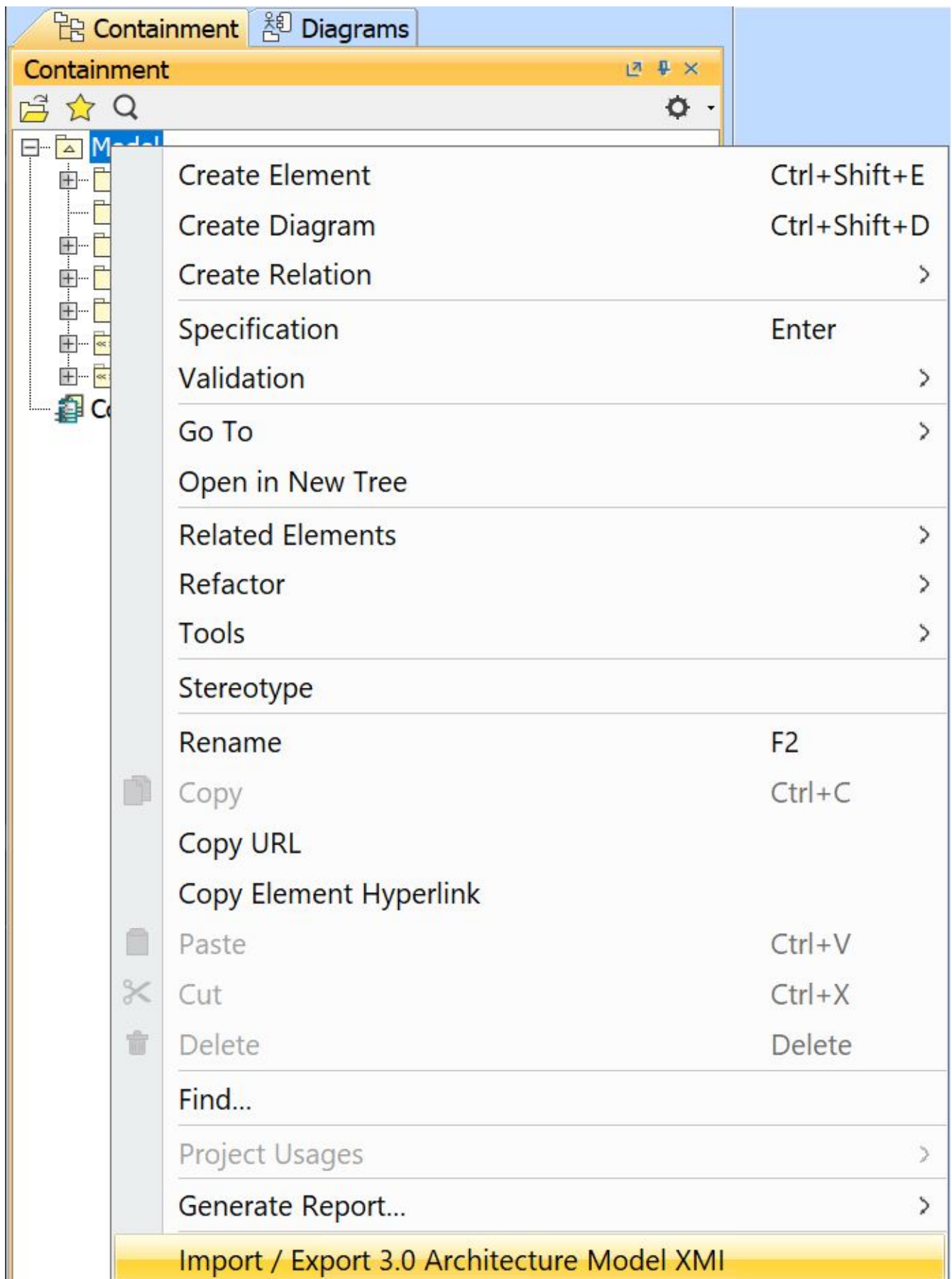


Figure 5. FACE Import/Export Architecture Utility

4.1. Setup a New Project

From a newly created MagicDraw Project, open the context menu in the Containment Tab and navigate to "Import/Export Architecture Model XMI". This will open the [FACE v3.* Import/Export Architecture Model XMI Utility](#).

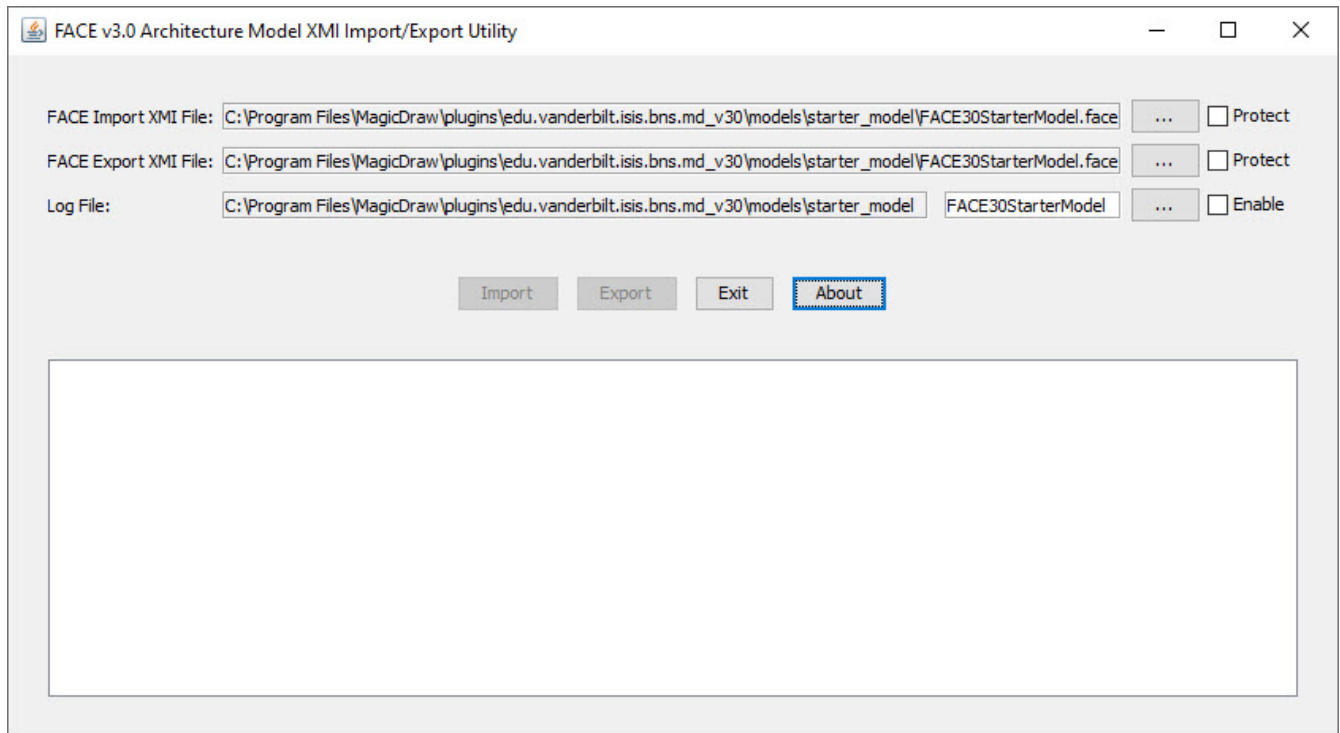


Figure 6. FACE v3.* Import/Export Architecture Model XMI Utility

Click the "About" Button to open a menu of options. From this list select "Open MagicDraw FACE Starter Model". Once the model opens, Save-As to the location you want to store your project. Reset the Model and Element IDs as described in section [Starter Model](#).

WARNING – You would start with the starter model unless you have created your own FACE profile. The starter model has the profile and customizations that are needed to create a FACE model. The plugin will not work without a profile because the profile provides the FACE stereotypes. The customizations are optional, but they make it easier to create FACE models. In addition to using the About menu above to obtain the starter model, you could copy the model from the MTI zip file directory "models\starter_model" under the "edu.vanderbilt.isis.bns.md_v30/31" directory. Also, once the MTI is installed, the starter model could be copied from the MagicDraw/Cameo install directory (e.g. C:\Program Files\Cameo Systems Modeler\plugins\edu.vanderbilt.isis.bns.md_v31\models\starter_model). After copying the starter model to a new location, it should be renamed to reflect the model purpose.

NOTE - When you are through using [FACE v3.* Import/Export Architecture Model XMI Utility](#), it is best to close the pop-up window. This window remains open until you close it. Therefore, if you re-invoke the plugin, a second window will be opened. Both the first and second window would still work, but having two open windows could be confusing.

4.1.1. Creating FACE Architecture Models

With a project set up with steps detailed in section [Setup a New Project](#) you can now use the tools to

begin creating a FACE Architecture Models.

First create a package and stereotype it as <FACEArchitectureModel>. Any child elements, diagrams, and relationships of this package will only be those allowed in the <FACEArchitectureModel> based upon the context you are modeling. For example, Observables can only be created in Conceptual Models. These elements will also be color coded. When creating diagrams, the pallet will be filtered based upon the type of diagram you are constructing.

4.2. Model-Tool-Interchange Plugin Usage

A MagicDraw project must be setup per Chapter [Plugin Setup](#), and one of Sections [Setup a New Project](#) or [Advanced Users](#) with a MagicDraw FACE 3.* profile setup before importing or exporting a FACE Architecture Model (i.e. .face XMI file). Note: You can only import a FACE 3.* XMI file into an MagicDraw model that has the corresponding FACE profile.

4.2.1. Importing and Export

Importing and Exporting are available based on the context selected in the Containment Tab. When Exporting a model, all children of the package with a stereotype of <FACEArchitectureModel> will be export to a FACE XMI file. Importing a FACE XMI will create packages with the <FACEArchitectureModel> stereotype that will contain imported FACE XMI model.

The model will be import or exported based on the file paths in [section \(1\)](#) of the plugin. These paths are generated based on the location of the MagicDraw project. You can change these paths to a custom destination. If you do, make sure to select the "Protect" box as the path will change if another project is selected. While a model is being transformed to or from the MagicDraw project, the status will be displayed in the [console \(4\)](#) within the plugin interface. If there are any errors that occur during the import or export they will also be displayed here as well.

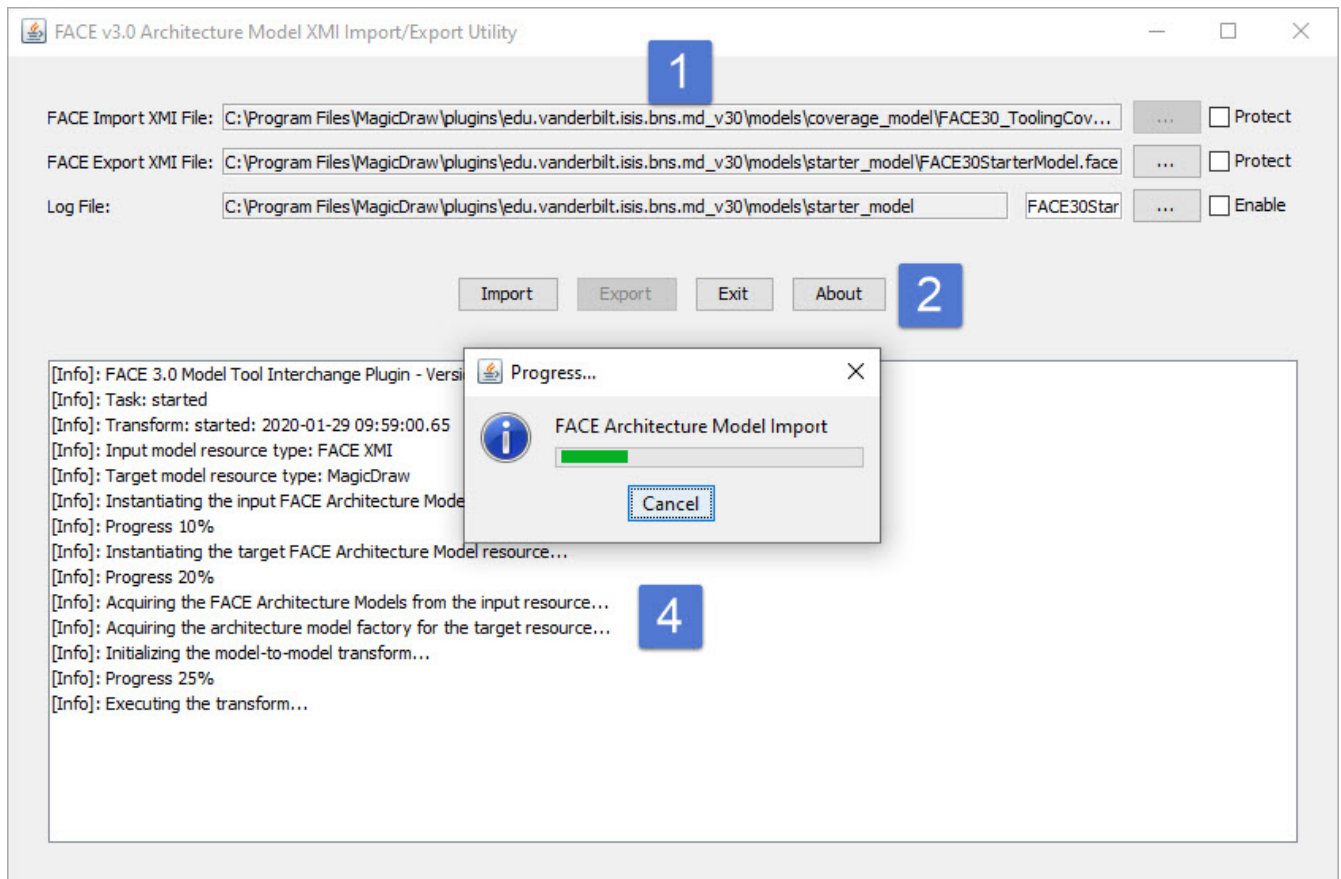


Figure 7. FACE XMI Export in progress

4.2.2. About

The about button brings up a menu of options. These include the license information, revision history, User Guide(the document you are currently reading), and known issues. Additionally there are links to several useful models and the profile supported by the tool. [console \(3\)](#) shows the complete menu.

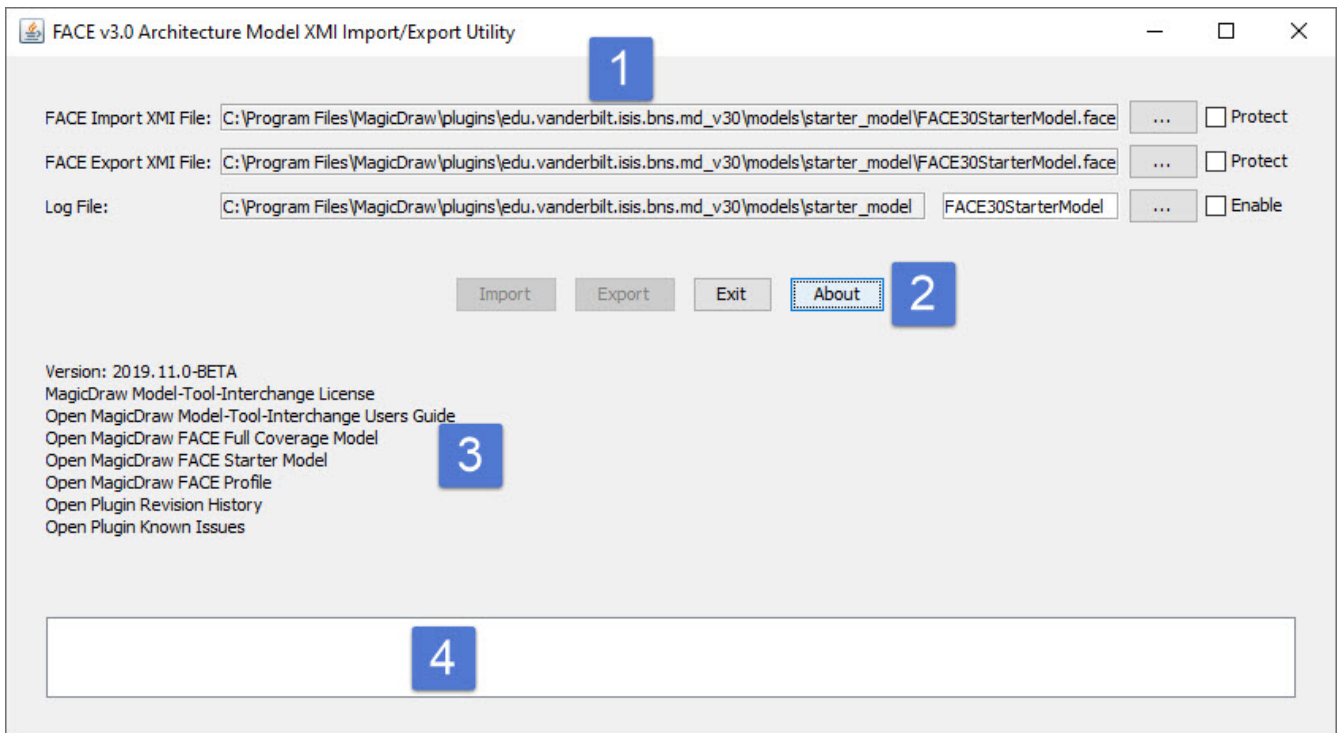


Figure 8. About Menu

Some MTI versions have an extra text box in the About panel as shown in the following figure ([console \(3.5\)](#))

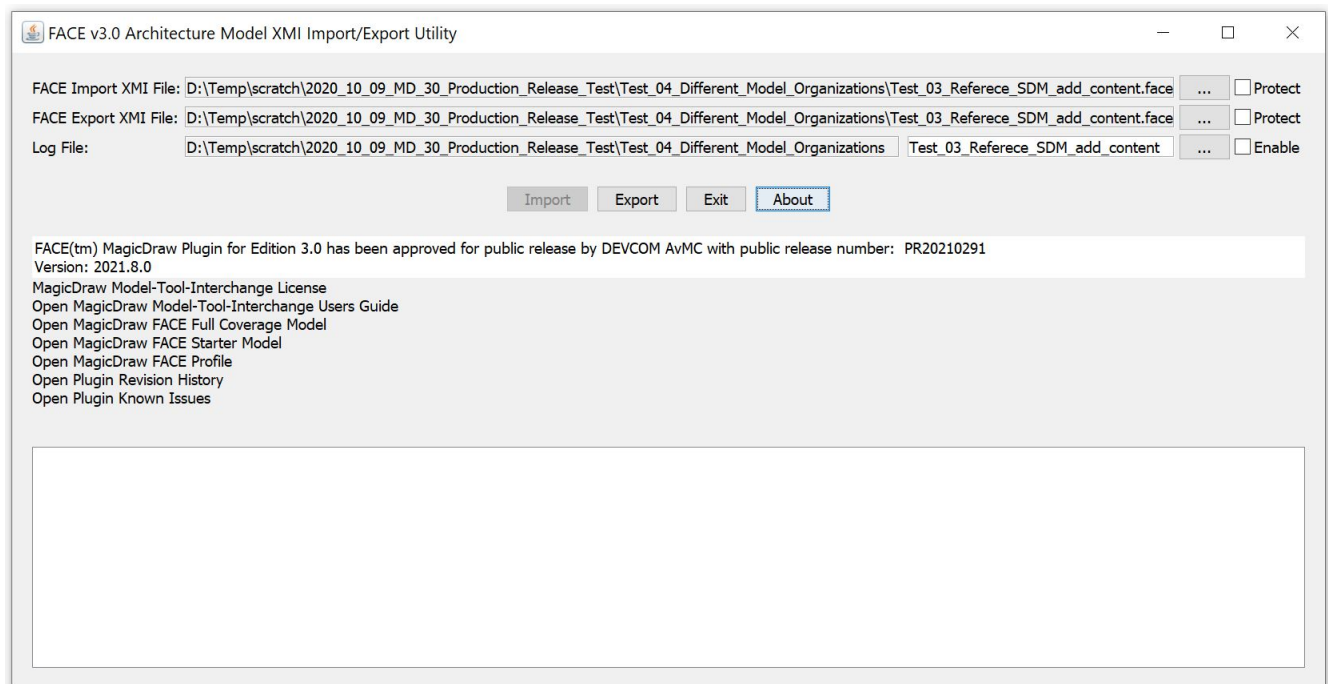


Figure 9. About Menu with Added Text Box

4.3. Advanced Users

For advanced users who find the automation to be cumbersome or that interferes with experiments using FACE in novel ways, it is possible to load the profile with out the additional support functions. Go to:

- "File" → "Use Project" → "Local Project".

Next select "<install.root\profiles>" from the "Paths to used Projects" then navigate to "FACE_3.*_Unified_Profile_v*.mdzip" as seen in [Advanced User](#). This will load the base profile with no customizations or automation to facilitate your experimentation. You can also use the plugin to load this profile from the about menu.

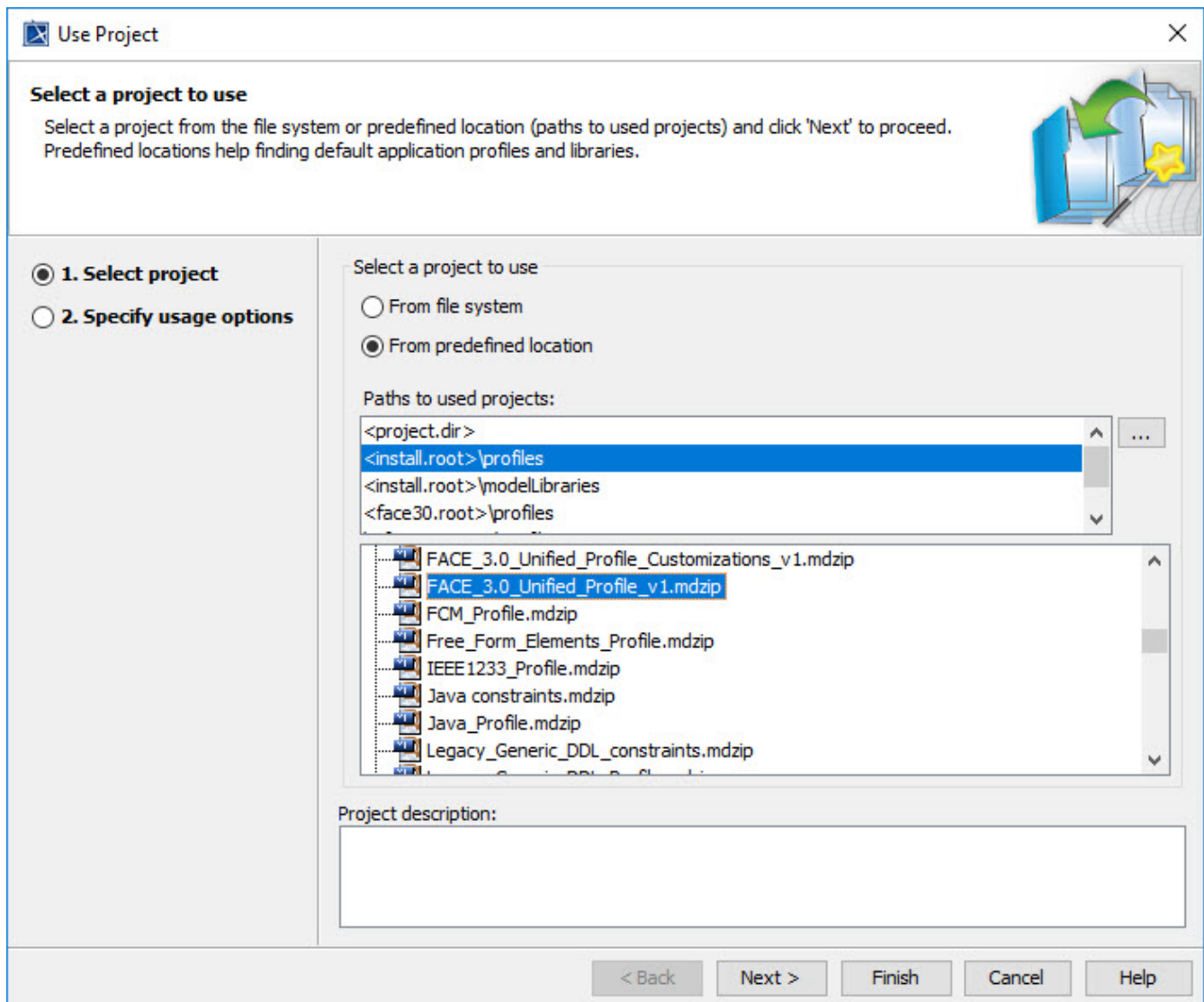


Figure 10. Using Profile without Customizations

The spreadsheet at C:\Program Files\MagicDraw\plugins\edu.vanderbilt.isis.bns.md_v3*\profiles\FACE_3.Unified_Profile_v1.xlsx contains the intended usage of each element in FACE_3.*_Unified_Profile.mdzip to help ensure you are using them in the intended manner.

Note: The customizations do not cover all use cases

5. Modeling Examples

5.1. External References

A model could consist of all the contents residing under a package stereotyped with FACEArchitectureModel (i.e. FACEArchitectureModel package). For example, FACEArchitectureModel package could contain:

- FACEDataModel 0..*
- UoPModel 0..*
- IntegrationModel 0..*
- TraceabilityModel 0..*

However, this approach is limiting. To provide greater flexibility, SmartPackages are used to reference entities that are not directly subordinate to the FACEArchitectureModel package.

Note - SmartPackages are supported in MTI v2021.10.0 and later.

Notice in the following figure ([SmartPackage Used to Reference External Entities](#)) that MyArchitecture<<FACEArchitectureModel>> contains two SmartPackages identified as SDM_Reference and UoP_Reference. Under the SDM_Reference SmartPackage there is a reference to SDM_3_0_2<<FACEDataModel>>, which points to SDM_3_0_2<<FACEDataModel>> under SDM_30[SDM_30.mdzip]. Notice that the model for this reference is in an external model named SDM_30.mdzip. The example illustrates referencing an external model for a portion of the content of the FACEArchitectureModel.

The second example shown in the figure is the UoP_Reference SmartPackage. For this case, the model referenced is contained in the MD project (i.e. not an external MD project). Under the UoP_Reference SmartPackage is a reference to UoPModel<<UoPModel>>, which points to UoPModel<<UoPModel>> under the UoPModels package.

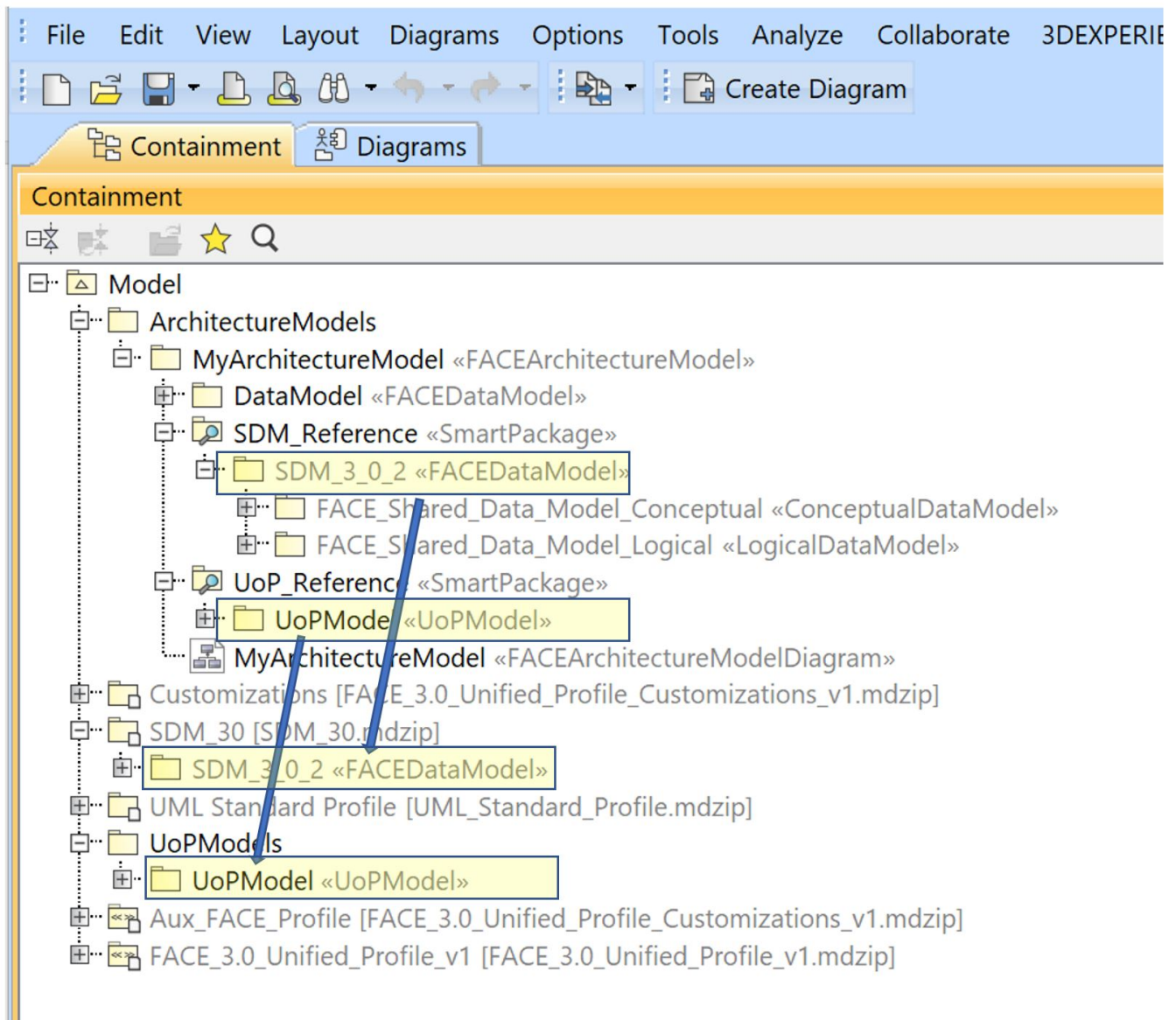


Figure 11. SmartPackage Used to Reference External Entities

Notes:

- Cardinality Rules – A FACEArchitectureModel can contain zero to many SmartPackages. A SmartPackage can contain zero to many references to models of stereotype of FACEDataModel, UoPModel, IntegrationModel, and/or TraceabilityModel.
- FACE Hierarchy Rules - A FACEDataModel cannot contain a FACEDataModel. However, a UoPModel can contain a UoPModel, an IntegrationModel can contain a IntegrationModel, and a TraceabilityModel can contain a TraceabilityModel. For those cases, a SmartPackage may appear at any level in the containment structure. In other words, if a UoPModel contains a UoPModel, a SmartPackage may appear at the top-level UoPModel and/or the subordinate level UoPModel.
- MTI Search of SmartPackages - It is important to understand that only the immediate SmartPackage is searched for FACE references. In other words, if a SmartPackage contains a SmartPackage, then only the highest level SmartPackage would be searched for FACE references.

6. Modifying the Appearance of Elements on a Diagram

MagicDraw provides tools to easily modify the appearance of elements on a diagram. The two approaches, discussed in this section, are modifying diagram properties and modifying existing elements on a diagram. A discussion of the two approaches follows.

6.1. Modify Diagram Properties

When you modify diagram properties, the changes affect the current elements residing on a diagram as well as future elements placed on the diagram. As an example, you can change the use of gradients in element fill colors on a diagram per the following steps.

Right click in the white space on the diagram, select “Diagram properties...”, change “Use Gradient Fill” to true/false.

6.2. Modify Existing Elements on a Diagram

MagicDraw provides tools to easily modify the appearance of elements that are already on a diagram. Note that these type changes only affect elements on a diagram and do not affect future elements placed on a diagram. Typically, you would want to modify a single element, all elements of a particular type, or all elements on a diagram.

The options for selecting element(s) follow:

- Single Element - Select a single element.
- All Elements of a Type – <Alt key> select an element. This will select all elements of the type selected that are on the diagram.
- Select All Elements - <ctrl key> A. This will select all elements on the diagram.

The options for modifying element cosmetics follow:

- Symbol Properties – Select an element(s) and right click and select “Symbol Properties”. This supports changing colors, fonts, line widths...
- Edit Compartments - Select an element(s) and right click and select “Edit Compartments”. This supports changing the items displayed in compartments. For example, to suppress displaying `_faceUUID`, in the “Compartment Edit” popup, select “Tagged Values” tab and move `_faceUUID` to the left (i.e. hidden).

7. Customizations

In the previous section we discussed ways to alter the cosmetics, of an element(s), that were already on a diagram. In this section, we discuss how to change the customizations such that when an element is dragged onto a diagram, it will have the desired appearance. The modification of one or more of the following bulleted items influences the appearance of items that are dragged onto a

diagram.

- **Diagrams** - Modification to diagrams only affects items dragged onto a diagram from the toolbar. The toolbar is the vertical bar, containing the tool palette, between the containment tree on the left and the diagram on the right. See Section [Setting Up Custom Diagrams](#) for a listing of the diagrams used by the MTI. If a diagram does not explicitly address a property (e.g. fill color), then the next two bulleted items would determine the appearance of the element.
- **Project Properties** - Project properties affect elements dragged from the containment tree onto a diagram and elements created via the toolbar where the particular property is not addressed by the toolbar. Project properties are set in the MagicDraw model. The starter model (see Section [Starter Model](#)) already has project properties that align with an approach to representing FACE elements on a diagram. If diagrams and project properties do not explicitly address a property, then the next bulleted item would determine the appearance of the element.
- **Profile Customizations** (e.g. `FACE_3.1_Unified_Profile_Customizations_v1.mdzip`) - Profile customizations affect elements dragged from the containment tree onto a diagram and elements created via the toolbar where the particular property is not addressed by the diagrams and not addressed by project properties.

As you probably realized from the previous text, the hierarchy for determining the appearance of an element on a diagram is diagrams, project properties, and then profile customization. In other words, diagrams overrule both project properties and profile customizations. Project properties overrule profile customizations.

It should be noted that in all cases when an element is on a diagram, then customization (i.e. three items listed above) changes would not affect the appearance on the diagram. Section [Modifying the Appearance of Elements on a Diagram](#) describes how to modify an element that is already on a diagram.

The following sections discuss diagrams, project properties, and profile customizations.

7.1. Diagrams

The changes you would typically consider making to diagrams are the content of the toolbars and changes to the properties of an element(s) dragged onto a diagram. A discussion of each follows:

7.1.1. Change Content of Toolbars

The section [Setting Up Custom Diagrams](#) describes how to setup the diagrams that define the tool palettes for each diagram type. You may wish to add additional tools to the tool palettes. To do so, within MagicDraw, select **Diagrams Customize** and select one of the Diagrams and select **Edit**. Follow the prompts to edit the diagram. See MagicDraw documentation for additional information. The plugin ignores entities that are not stereotyped with a FACE stereotype; and thus, your non-FACE additions will not be exported.

7.1.2. Editing Diagrams to Change the Appearance of Elements Created from Toolbars

Toolbars affect the appearance of an element when the toolbar is used to create an element on a diagram. For example, to change the toolbar to show tags for ConceptualAssociationParticipants, select via MD/Cameo user interface Diagrams, Customize, select “FACE 3.1 Conceptual Data Model Diagram”, Edit, select Next to progress to “4. Specify toolbar buttons”, select “Participant (Conceptual)”, Edit, select tab “Symbol Properties”. The displayed panel has the field “Show Tagged Values”, which determines if tags are shown when the toolbar is used to add ConceptualAssociationParticipants. If you would like the tag values to be shown, then change “Show Tagged Values” to true.

Figure [Participant Not Showing Tags](#) shows the default behavior for elements created via the toolbar and Figure [Participant Showing Tags](#) shows the appearance after making the change described in the previous paragraph when the toolbar is used to make new ConceptualAssociationParticipants.

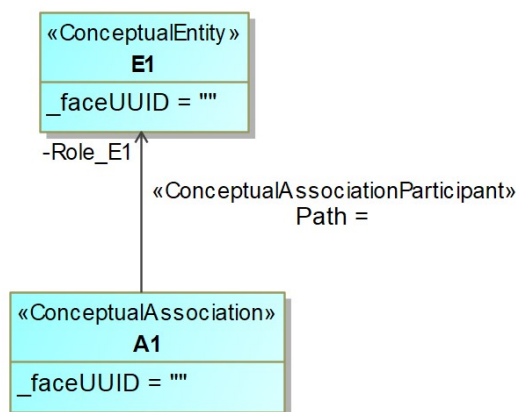


Figure 12. Participant Not Showing Tags

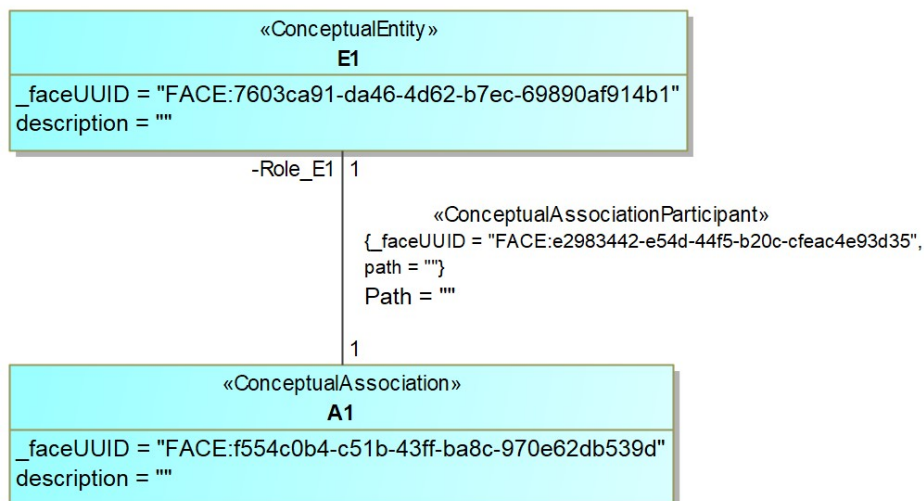


Figure 13. Participant Showing Tags

7.2. Project Properties

Typically, you would edit the project properties in the starter model and use the edited starter

model by copying it to the applicable project name. See Section [Starter Model](#) for information about the starter model.

To edit the project properties, in MagicDraw, select Options Project "Symbol styles" Default Stereotypes. From there, you can modify properties of the FACE stereotypes. In some cases, a stereotype would not be listed, and for that case, right click on Stereotypes and add the stereotype. When editing the stereotype properties, you should be cognizant of the inheritance hierarchy of the particular stereotype. It is often better to edit the generalization stereotype, which would provide a broader scope of the change.

The documents `Revision_History_3.0.txt` and `Revision_History_3.1.txt` describe the changes that were made to the starter model. In some cases, those changes involved editing project properties; and thus, reviewing those changes could be beneficial prior to making additional changes. Additionally, reviewing those changes would give insight into the type of changes that might be beneficial. These types of changes were first made in version 2024.03.0.

In general, editing the starter model is a good approach in that the edited starter model will likely be compatible with future versions of the MTI. To check if a future version has edits to the starter model, refer to the revision history documents. In most cases there will be no edits; and thus, your edited starter model will still be viable.

7.3. Profile Customizations

In this section we will demonstrate changing profile customizations by changing the display of "Path =" in Figure [Participant Not Showing Tags](#). The title of this figure addresses tags, but the field "Path =" is controlled by compartments as opposed to tag settings.

This section describes how to change the appearance of the ConceptualAssociationParticipants. The procedures apply to the Logical and Platform levels as well with the text "Conceptual" replaced with "Logical" or "Platform". Likewise, if you are using 3.0 replace "3.1" with "3.0" in the text with the exception that 3.0 diagrams do not contain a version number. Also, this section assumes that the MTI has been installed per the installation instructions in this document.

The "Path =" is controlled by a customization and this is because project properties and/or diagrams did not overrule this setting. To not show "Path =" for FACE 3.1, edit `<MD/Cameo Install Directory>/profiles/FACE_3.1_Unified_Profile_Customizations_v1.mdzip`. Open this model with MagicDraw and navigate to `ArchitectureModel/DataModel/ConceptualModel` and edit `ConceptualAssociationParticipant`. Navigate to "Properties Displayed in Compartment". Notice it is set to "Path". Remove "Path" if you do not want the Path displayed on diagrams.

Note – To edit a file in "Program Files" you need to copy it to another location, edit it, and copy it back to "Program Files".

Editing profile customizations is a less desirable approach because your edited customizations are more difficult to maintain as the customizations are edited with new release of the MTI.

8. Additional Information

8.1. FACE Profile Identification

The typical FACE profile (delivered with the MTI) is named “FACE_3.0_Unified_Profile_v1.mdzip” or “FACE_3.1_Unified_Profile_v1.mdzip”. Note that the 3.1 profile also works with 3.2. It should be noted that you do not have to use the profile delivered with the MTI. You could create your own profile as long as your profile contains the stereotypes used by your model that are contained in the profile delivered with the MTI. The MTI selects the profile as described in Section [Profile Identification](#). It is important that all other profiles used by your model are not treated as FACE profiles; otherwise, there could be collisions in the names of stereotypes. If collisions do occur, the resulting error message will provide instructions for corrective action. Section [Profile Identification](#) provides detailed information on how to configure the profile.

8.2. Compatibility between FACE Editions

The FACE 3.0 MagicDraw plugin can only be used with MagicDraw models and XMI files (i.e. .face files) created for FACE 3.0.

The FACE 3.1/3.2 MagicDraw plugin can only be used with MagicDraw models and XMI files (i.e. .face files) created for FACE 3.1/3.2.

8.3. Participants in a .face File Without a Type

If a .face file contains a Participant that does not have a Type set, then when that .face file is imported, the Participant will not be created in the MD/Cameo model. This is because Participants are modeled in MD/Cameo as UML Associations (i.e. a FACE Association - - - - Participant - - - - > FACE Entity). In this case, the Type (i.e. FACE Entity) must exist to create the UML Association. Thus, without the Type, there is not a way to create the Participant MD/Cameo construct.

8.4. Searching for MagicDraw Element IDs

Logging messages and error messages may contain MagicDraw element IDs. MagicDraw element IDs are unique IDs assigned by MagicDraw to each element. When using Edit Find (or Ctrl Shift F), you can search for MagicDraw element IDs by prefixing the search string with “xmi.id=” (e.g. xmi.id=_2022x_2_937029f_1706739487032_98903_16491). If you do not use the prefix, then MagicDraw will not find the element ID. Note that when searching for _faceUUIDs, you would not use the prefix.

8.5. Testing History

There are limited resources to test the plugins on multiple operating systems and with multiple versions of MagicDraw. The following table provides information on the level of testing that has been conducted.

8.5.1. FACE 3.0 MagicDraw Model-Tool-Interchange Plugin

Plugin Version	Operating System	MagicDraw/Cameo Version	Test Scope
2019.9.0-BETA	Windows 10	18.5, 19.0 (Import Only)	Testing with coverage model
2019.10.0-BETA	Windows 10	18.5, 19.0 (Import Only)	Testing with coverage model, BALSA, and other models
2019.11.0-BETA	Windows 10	18.5, 19.0	Testing with coverage model, BALSA, and other models
2020.2.0	Windows 10	18.5, 19.0	Testing with coverage model, BALSA, and other Models
2021.7.0	Windows 10	18.5, 19.0, 2021	Testing with coverage model, BALSA, and other Models. Note - MD v2021 (i.e. Cameo 2021) had anomalies; and thus, Cameo 2021 should not be used. For Cameo 2021, the import/export worked correctly, but logging and display of messages to the UI window did not work correctly.
2021.7.1	Windows 10	18.5, 19.0	Due to only a minor change (notification events call) to the UI, only a subset of the 2021.7.0 tests were conducted.
2021.8.0	Windows 10	18.5, 19.0	Due to only a minor change to the About panel, only a subset of the 2021.7.0 tests were conducted.
2021.10.0	Windows 10	18.5, 19.0	Testing with coverage model, BALSA, and other Models
2022.3.1	Windows 10	19.0, 2021	Testing with coverage model, BALSA, and other Models
2023.2.0	Windows 10, 11	19.0, 2021, 2022	Testing with coverage model, BALSA, and other Models
2023.5.0	Windows 10, 11	19.0, 2021, 2022	Testing with coverage model, BALSA, and other Models
2023.11.0	Windows 10, 11	19.0, 2021, 2022	Testing with coverage model, BALSA, and other Models
2024.3.0	Windows 10, 11	2021, 2022, 2024	Testing with coverage model, BALSA, and other Models

8.5.2. FACE 3.1 MagicDraw Model-Tool-Interchange Plugin

Plugin Version	Operating System	MagicDraw Version	Test Scope
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2020.5.0-BETA	Windows 10	18.5, 19.0	Testing with coverage model, BALSA, and other Models
2020.8.0	Windows 10	18.5, 19.0	Testing with coverage model, BALSA, and other Models
2021.10.0	Windows 10	18.5, 19.0	Testing with coverage model, BALSA, and other Models
2022.3.1	Windows 10	19.0, 2021	Testing with coverage model, BALSA, and other Models
2023.2.0	Windows 10, 11	19.0, 2021, 2022	Testing with coverage model, BALSA, and other Models
2023.5.0	Windows 10, 11	19.0, 2021, 2022	Testing with coverage model, BALSA, and other Models
2023.11.0	Windows 10, 11	19.0, 2021, 2022	Testing with coverage model, BALSA, and other Models
2024.3.0	Windows 10, 11	2021, 2022, 2024	Testing with coverage model, BALSA, and other Models

8.6. Bug Reports

Send all bug reports and improvement suggestions to robert.l.owens@vanderbilt.edu.

9. Troubleshooting

9.1. Unresolved GUID

Possible Causes: The referenced element GUID was not exported because it is defined as a child of an element is not owned by a parent.

9.1.1. Example

A `Connection(QueuingConnection, SingleInstanceMessageConnection, ClientServerConnection)` element is an end point for a Unit of Portability. Then the `Connection(QueuingConnection, SingleInstanceMessageConnection, ClientServerConnection)` is used as `MessageType` to a Platform View.

9.2. Installation of MagicDraw in a Non-Standard (i.e. not Program Files) Location Known Issues

Under the following conditions, the Importer/Exporter Plugin may not appear when right clicking on an item in the MagicDraw containment tree:

1. MagicDraw installed in a non-standard location.

2. Start MagicDraw with the icon setup by the MagicDraw installer. This is just a shortcut to the MagicDraw exe (magicdraw.exe)....

MagicDraw installed in a non-standard location. Start MagicDraw with the icon setup by the MagicDraw installer. This is just a shortcut to the MagicDraw exe (magicdraw.exe).

If this condition occurs, a workaround is to start MagicDraw by double clicking on the exe (magicdraw.exe) located in the bin folder of the installation directory. Another workaround is to delete the shortcut created by the MagicDraw installer, and manually recreate the shortcut.

9.3. Inconsequential Logging Error Messages

The log file may contain errors (i.e. [ERROR]), which are artifacts of configuring logging. These errors will contain the string “PerObject”. When reviewing the log file, these errors should be ignored. They are not relevant to the model being valid/invalid.

9.3.1. Example

```
[ERROR]
edu.vanderbilt.isis.face.v31.architecturemodel.transform.model2model.executor.Model2ModelTransformExecutor.PerObject.2 -
[INFO ] edu.vanderbilt.isis.common.logger.ListAppender - Registering
"edu.vanderbilt.isis.face.v31.architecturemodel.transform.model2model.executor.Model2ModelTransformExecutor$$Lambda$709/1806812515" listener for logger
"edu.vanderbilt.isis.face.v31.architecturemodel.transform.model2model.executor.Model2ModelTransformExecutor.PerObject.2"
[ERROR]
edu.vanderbilt.isis.face.v31.architecturemodel.transform.model2model.executor.Model2ModelTransformExecutor.PerObject.2 -
edu.vanderbilt.isis.face.v31.architecturemodel.transform.model2model.executor.Model2ModelTransformExecutor$$Lambda$709/1806812515@1fd66a5c
```

10. Acronyms

Acronym	Description
FACE	Future Airborne Capability Environment
MTI	Model Tool Interchange
XMI	Extensible Markup Language Metadata Interchange
XML	Extensible Markup Language

11. Version History

Revision	Date	Authors(s)	Description
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2019.9.0	10/25/2019	FE,RD,RO,JH	Initial Publication
2019.10.0	10/25/2019	JH	Added instructions for installing the plugin without Admin privileges
2019.11.0	11/22/2019	JH	Added Troubleshooting section in Appendix A
2020.2.0	02/21/2020	JH,RO	* Corrected an error in the Install Plugin section. * "copy the FACE 3.0 MagicDraw Model-Tool-Interchange Plugin into this directory" was ambiguous. * Updated to name the directory to copy. * Updated Images to Reflect Current Tool. Added instructions for installing with Cameo. * Added "Standard Workflow" section
2020.5.0	06/03/2020	JH	Added 3.1 support in document
2020.8.0	08/12/2020	RO	Updated test scope to indicate the testing that was done for version 2020.8.0
No formal revision	10/08/2020	RO	Updated the Vanderbilt copyright notice with the latest wording. Corrected several typographical and section reference errors.
2021.7.0	7/14/2021	RO	Updated Figure FACE Import/Export Architecture Utility to show the version (i.e. 3.0) number in the dropdown menu.
2021.8.0	8/25/2021	RO	Added an extra About Figure, About Menu with Added Text Box .
2021.10.0	10/6/2021	RO	Added Sections External References and "Customizing Diagrams".
2021.10.0_A	2/7/2022	RO	Added a WARNING in Section FACE v3.* MagicDraw Model-Tool-Interchange Plugin Usage to select an element in the containment tree. Added a WARNING in Section Setup a New Project to always start with the starter model.
2022.3.1	3/16/2022	RO	In Section FACE 3.* MagicDraw Model-Tool-Interchange Plugin Setup removed MD/Cameo version 18.5 and added 2021.
2022.3.1	5/18/2022	RO	Moved the Models section before the FACE v3.* MagicDraw Model-Tool-Interchange Plugin Usage section. Added content to the Models section clarifying that the starter model should always be used to create new models. Updated various portions of the document to emphasize/clarify that the starter model should be used. Updated Install Plugin section to clarify how to install the plugin. Removed Java from the Prerequisites section. In section Setup a New Project added a note to close the pop-up window. Added figures for plugins and profiles directories.

2023.2.0	2/1/2023	RO	Changed 3.1 to 3.1/3.2 and updated text related to this change. Added instructions indicating that the installation zip file may contain a single version (3.0 or 3.1/3.2) or both versions. Updated testing information to indicate testing with Cameo 2022. For text about the starter model, added instructions to reset model and element IDs. Changed the prerequisites to include MD/Cameo 2022.
2023.5.0	5/18/2023	RO	For 3.0 and 3.1/3.2, made numerous security related improvements. For 3.1, improved the customizations and diagrams for Traceability. Added section FACE Profile Identification .
2023.11.0	11/1/2023	RO	For 3.0 and 3.1/3.2, implemented the new approach to modeling Association Participants. With this approach there is a single line (i.e. UML Association) between an Association and Entity. The old constructs are still supported, and legacy models will work as they did before. Made security improvements. Implemented a more robust way of identifying the profile model(s) (see Profile Identification). Added Sections Participants in a .face File Without a Type and [Customizing the Appearance of Participants on Diagrams] .
2024.3.0	3/1/2024	RO	Added Section Searching for MagicDraw Element IDs . Deleted section "Customizing Diagrams". Added sections Modifying the Appearance of Elements on a Diagram and Customizations . Changed the prerequisites to exclude MD/Cameo 19 and include 2024.