



# Misterine Studio

## User Manual & Quick Start Guide

V1.5.0

## Table of Contents

Introduction .....	4
System Requirements .....	6
Installation .....	7
License .....	8
User Interface Overview .....	10
Project Management .....	12
Project .....	12
Resources .....	12
Process Definition .....	14
Process Management .....	14
Process Workflow Definition .....	15
Task / Subprocess Details .....	17
Decision Point Details .....	17
Process details .....	19
Process resources .....	19
Scene Definition .....	20
Scenes .....	20
Scene Templates .....	20
Scene Interface Overview .....	22
Scene Creation .....	23
Scene Objects .....	23
Models .....	29
Model import .....	30
Tracking Markers .....	31
Interactive Anchors .....	32
Labels .....	33
Notes .....	33
Scene View .....	36
Animations .....	39
Animation import .....	42
Assets .....	42
Materials .....	43
Process Validation .....	47

Show Validation Status.....	47
Process Deployment .....	48
Process Export .....	49
Appendix.....	50
Keyboard Shortcuts .....	50
Scene Explorer Filtering.....	54
General Limitations .....	55
S1000D Limitations.....	57

## INTRODUCTION

Misterine Studio is a desktop software for authoring AR technical manuals that are published to the Misterine App application. AR technical manuals combine the detailing of processes of a technical manual with a new way of presenting the visual information related to that process using Augmented Reality. This method presents visual cuing overlaid onto the physical environment in a manner that is fully embedded into the world. An example is shown in the image Figure 1. The colored parts are augmentations shown virtually being inserted into the physical cone below. At the upper right, the same physical part as the purple part is visible. The augmentations can also animate to show the user explicitly each task to be performed, here inserting the fitting and affixing with bolts and nuts seen on either side (green and orange colors respectively).

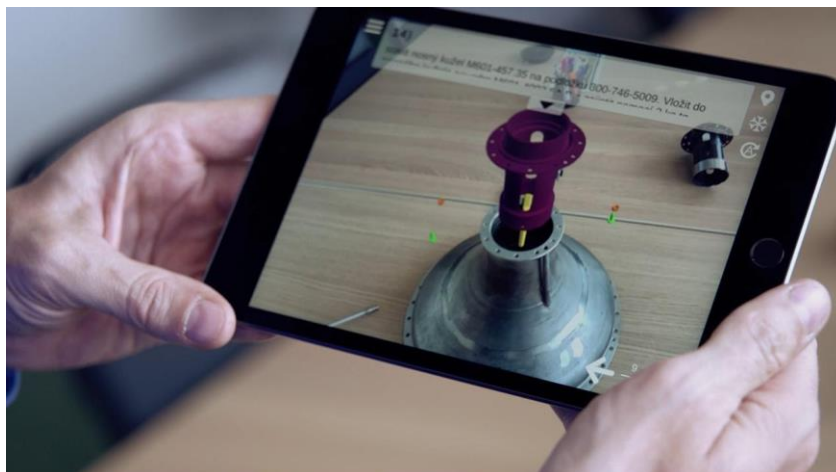


Figure 1 Augmented reality

To achieve this Misterine Studio has two main interfaces that work together to allow authoring of the AR technical manuals. The main Misterine Studio interface facilitates the creation of the Process that should be performed. Both creation of Processes by hand and via import of the industry standard S1000D definition of the process. A progress flow graph is a basis for editing the process and providing all related materials, like images, reference data, etc.

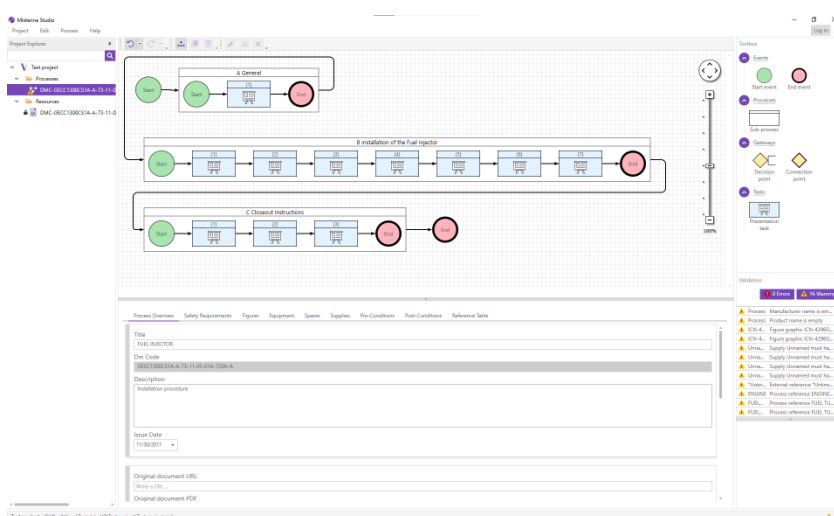


Figure 2 Process definition

An example of a Process that is created by importing an S1000D is shown on the Figure 2. In the center is the flow of this linear process. Validation of the flow is continually performed and displayed.

Each task may have a 3D scene attached to it, which is how the augmentations are defined. There is a specialized interface provided for this purpose. It is similar to user interfaces used in CAD and 3D modeling software.

Figure 3 is an example of a 3D scene of one of the steps defined in the process. In this case we have a butterfly valve consisting of multiple parts. We see this in the center of the interface. This is the place where augmentations and animations are designer.

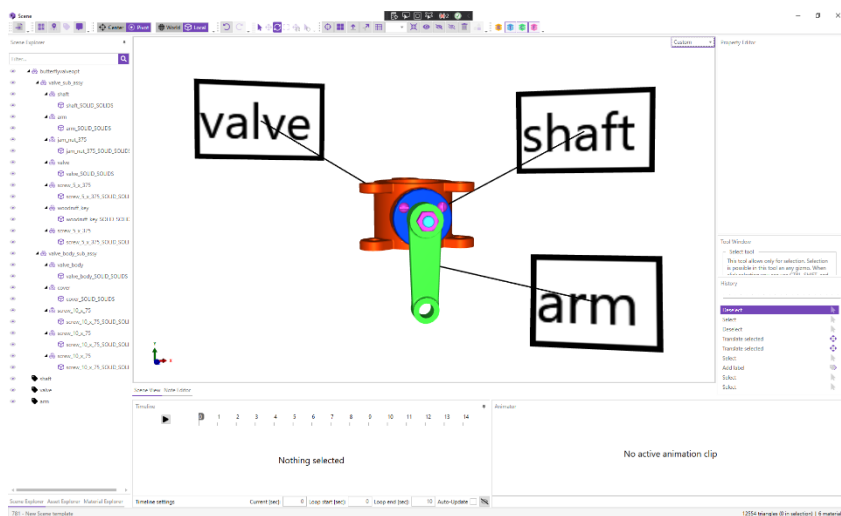


Figure 3 Scene definition

## SYSTEM REQUIREMENTS

- Windows 10 (10.0.17134)
- At least 16GB RAM
- At least NVidia 1050 or equivalent graphics card
- At least 1GB of disk space available
- Installation of [.NET 3.5](#), [.NET 4.8](#) and [MICROSOFT VISUAL C++ REDISTRIBUTABLE X64 FOR VISUAL STUDIO 2015, 2017 AND 2019](#) (part of the installer)

## INSTALLATION

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### INSTALL MISTERINE STUDIO

1. Run the **misterine\_studio\_1.5.0.exe** file
  2. Select the language
  3. Read the installation instructions of the setup wizard and click **Next**
  4. Accept the license agreement and click **Next**
  5. Wait for the prerequisites check and click **Next**
  6. Select the destination location for the installation and click **Next**
  7. Select additional tasks to be performed and click **Next**
  8. Click **Install** and wait for the end of the installation process
  9. Click **Finish** to exit the setup wizard
- 

### UPGRADE MISTERINE STUDIO

1. Run the **misterine\_studio\_1.5.0.exe** file
  2. Select the language
  3. Read the upgrade instructions of the setup wizard and click **Next**
  4. Wait for the prerequisites check and click **Next**
  5. Click **Install** and wait for the end of the upgrade process
  6. Click **Finish** to exit the setup wizard
- 

### UNINSTALL MISTERINE STUDIO

1. Run the **misterine\_studio\_1.5.0.exe** file
2. Select the language
3. Read the uninstallation instructions of the setup wizard and click **Uninstall**
4. Click **Yes** to accept the uninstallation of the Misterine Studio
5. Wait for the uninstallation process to be finished
6. Click **Ok** to exit the setup wizard

## LICENSE

Misterine Studio supports two types of a license. The first type is Free license, which is automatically set during the first run of the Misterine Studio. The Free license limits package deployment options only to deploy to embedded server. The second type is Full license and it allows Misterine Studio to deploy also on a remote server. For the Full license activation, the license ID and license activation code is needed.

---

### ONLINE ACTIVATION

1. Go to **Help > License**
2. Click **Activate online** or click arrow to the right and then choose **Activate online**
3. Enter license ID, license activation code and optional installation name
4. Click **Activate**

---

### ONLINE DEACTIVATION

1. Go to **Help > License**
2. Click **Deactivate online** or click arrow to the right and then choose **Deactivate online**
3. Confirm deactivation and click **Deactivate**

---

### ONLINE REFRESH

1. Go to **Help > License**
2. Click **Refresh online** or click arrow to the right and then choose **Refresh online**

---

### MANUAL ACTIVATION

1. Go to **Help > License**
2. Click arrow to the right from **Activate online** and then choose **Activate manually**
3. Enter license ID, license activation code and optional installation name
4. Click **Generate activation request**
5. Click **Save to file** or **Copy to clipboard** to store activation request in preferred way
6. Click **Open activation page**
7. Follow instructions on the activation webpage for obtaining activation response
8. Click **Load from file** or **Paste from clipboard** to get obtained activation response back to the form
9. Click **Activate**

---

### MANUAL DEACTIVATION

1. Go to **Help > License**
2. Click arrow to the right from **Deactivate online** and then choose **Deactivate manually**
3. Click **Save to file** or **Copy to clipboard** to store deactivation request in preferred way



4. Click **Open deactivation page**
5. Follow instructions on the deactivation webpage for obtaining deactivation response
6. Click **Load from file** or **Paste from clipboard** to get obtained deactivation response back to the form
7. Click **Deactivate**
8. Confirm deactivation and click **Deactivate**

---

#### MANUAL REFRESH

1. Go to **Help > License**
2. Click arrow to the right from **Refresh online** and then choose **Refresh manually**
3. Click **Save to file** or **Copy to clipboard** to store refresh request in preferred way
4. Click **Open refresh page**
5. Follow instructions on the refresh webpage for obtaining refresh response
6. Click **Load from file** or **Paste from clipboard** to get obtained refresh response back to the form
7. Click **Refresh**

## USER INTERFACE OVERVIEW

Misterine Studio interface can be visually separated into left, central, and right sections. Each section contains modules which are numbered and presented on the Figure 4.

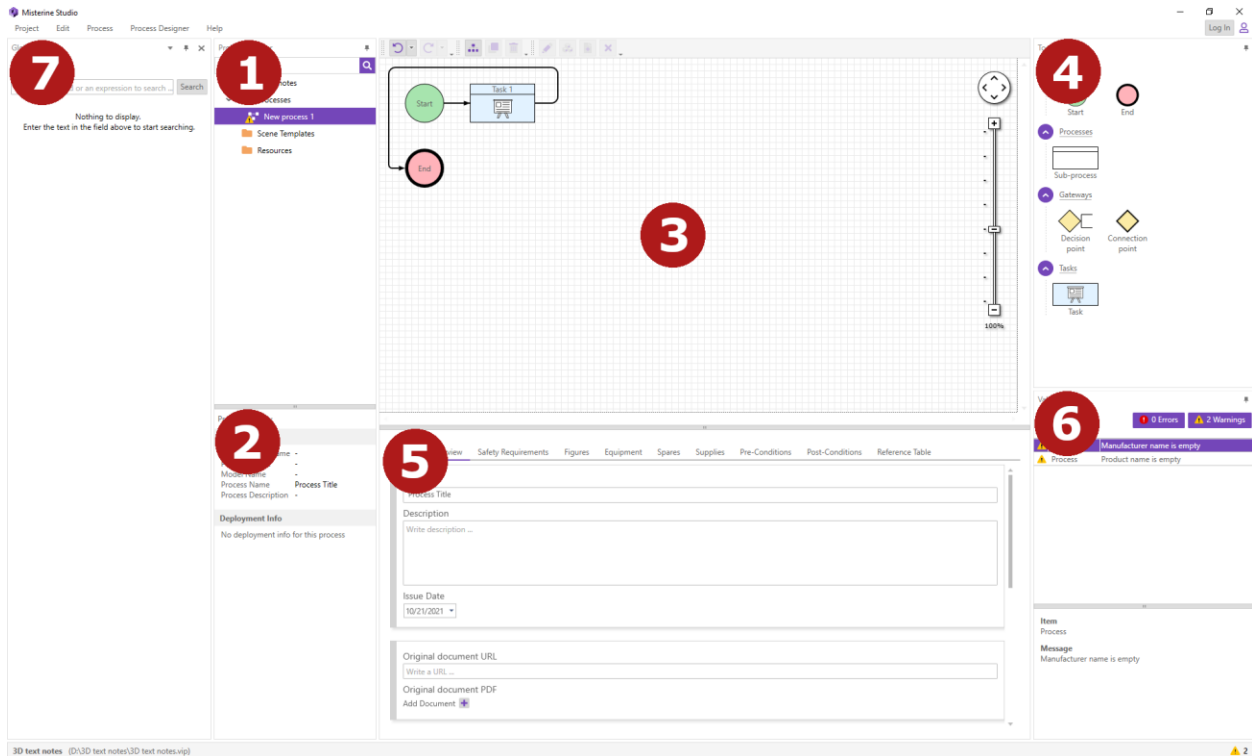


Figure 4 Misterine Studio UI

### LEFT SECTION MODULES

1. **Project Explorer** holds the tree of project items presented as processes, resources, and scene templates. The module is responsible for creating, deleting, updating, and viewing project items.
2. **Project Item Preview** shows base information for single item currently selected in the **Project Explorer**. Preview can be shown for five project item types: Process, Image file, PDF file, XML file, and TXT file.
3. **Global Search** allows to perform the word searching among the whole project. Module supports three searching regimes: '**Match Case**', '**Match Whole Word**', and '**Use Regular Expression**'. All regimes can be used simultaneously. In case of successful search, the module shows the result tree which contains the path from the process to the element that contains the searched word.

### CENTRAL SECTION MODULES

1. **Process Designer** shows the current diagram of an opened process. The module allows to add, delete, update, and connect process elements.
2. **Process Item Details** shows the detailed information of a current selected process element. In case when no process element is selected the module displays several tabs with detailed information about process and its components: '**Process Overview**', '**Safety Requirements**', '**Figures**', '**Equipment**', '**Spares**', '**Supplies**', '**Pre-Conditions**', '**Post-Conditions**', '**Reference Table**'.

---

## RIGHT SECTION MODULES

1. **Toolbox** holds the allowed process elements which can be added to a process diagram.
2. **Process Validation** displays the warnings and errors which were found during the process creation. A process cannot be deployed if it contains errors.

## PROJECT MANAGEMENT

Projects in Misterine Studio are a collection of processes, scenes and resources. Items in projects can be interconnected and referenced. The majority of project management operations are performed from the Project Explorer. Every project will create a physical folder on the disk named after the Project name. This folder will contain the project file (with .vip extension) as well as other project files.

### PROJECT

---

#### CREATE A NEW PROJECT

1. Go to **Project > New Project**
2. Enter the project name and location
3. Click **Finish**

---

#### OPEN AN EXISTING PROJECT

4. Go to **Project > Open Project**
5. Navigate to the “.vip” project file
6. Click **Open**

---

#### OPEN A RECENTLY OPENED PROJECT

1. Go to **Project > Recent Projects**
2. Click the project to open

---

#### CLOSE THE CURRENTLY OPENED PROJECT

1. Go to **Project > Close Project**
- or
1. Right click the project in Project Explorer
2. Click **Close project**

### RESOURCES

Resources are external files imported into the project. Misterine Studio keeps track of two kinds of resources, source files and true resources. For large projects, it is possible to organize the project resources by creating and using folders.

Source files include S1000D XML files and TXT files.

---

#### IMPORT RESOURCES TO PROJECT

1. Select resource folder you want to import the file to

2. Go to **Project > Import > Import File**

3. Navigate to the file

4. Click **Open**

or

1. Right click the **Resources** folder (or any subfolder)

2. Click **Import File**

3. Navigate to the file

4. Click **Open**

---

#### CREATE SUBFOLDERS FOR RESOURCES

1. Select resource folder under which you want to create the folder

2. Go to **Project > Create Folder**

3. Name the newly created folder in the Project Explorer

or

1. Right click the resource folder under which you want to create the folder

2. Click **Create Folder**

3. Name the newly created folder

---

#### SET RESOURCE ACCESS RIGHTS

1. Right click a resource

2. Go to **Access Rights > Shareable**

3. Check the button to set the resource as **Shareable**, uncheck to make the resource **Private**

---

#### PREVIEW RESOURCE

1. Right click a resource

2. Click **Preview Resource / Preview Image**

## PROCESS DEFINITION

Processes are defined using the visual interface in the Process Designer.

## PROCESS MANAGEMENT

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### CREATE NEW EMPTY PROCESS

1. Right click the **Processes** folder in Project Explorer
  2. Choose **Create New Empty Process**
  3. Name the newly created process
- or
1. Go to **Process > Create New Empty Process**
  2. Name the newly created process

---

### CREATE PROCESS FROM IMPORTED TEXT RESOURCE

1. Right click the text resource in Project Explorer
2. Choose **Convert to Process**
3. Wait for the action to finish
4. Name the newly created process

---

### CREATE PROCESS FROM IMPORTED S1000D RESOURCE

1. Right click the S1000D resource in Project Explorer
2. Choose **Create New Process from S1000D**
3. Wait for the action to finish
4. Name the newly created process

---

### CREATE PROCESS FROM S1000D FILE ON DISK

1. Right click the **Resources** or any subfolder in Project Explorer
2. Choose **Import S1000D**
3. Navigate to the S1000D file
4. Click **Open**
5. Resolve any missing images (see Resolve missing image during S1000D file import)
6. Wait for the action to finish
7. Name the newly create process


---

## RESOLVE MISSING IMAGE DURING S1000D FILE IMPORT

1. Choose to either use existing resource or import new one

---

### RESOLVE BY CREATING A NEW RESOURCE

2. Choose name for the new resource
3. Click the  icon and navigate to the image file
4. Choose optional settings (searching in selected directories, etc.)
5. Click **Next** and repeat for other images

---

### RESOLVE USING EXISTING RESOURCE

2. Choose resource image from the list
3. Click **Next** and repeat for other images

---

## OPEN PROCESS

1. Double click the process in Project Explorer
- or
1. Right click the process in Project Explorer
  2. Choose **Open**

## PROCESS WORKFLOW DEFINITION

The process starts with the Start node and ends with the End node. The arrows of the graph define the order of tasks that the user should perform.

The elementary unit of work the user should do is called a Task (also known as a step). A sequence of Tasks and other nodes in the graph define the instruction manual flow. Besides Tasks, there are other types of nodes in the graph.



**Start event** indicates where a Process starts. A process must have exactly one Start Event node. Start Event nodes also exist in Sub-Processes, but outside of Sub-Processes, there might be just one. Other than the logical beginning of the process, the Start Event node has no other practical visualization.



**End event** node indicates the end of the Process. It is a logical node for the purposes of indicating the end and it has no other practical visualization. End nodes exist also in Sub-Processes, described below.



**Presentation tasks** are the fundamental work that the Misterine App user does. These are often called steps for a procedure.



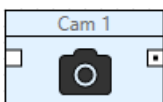
**Sub-Process** is a logical separator in a Process. Typically, it is used to hold a complex task that is logically one thing, but requires the user to perform multiple individual tasks. Sub-Processes can be embedded up to 8 levels. A Sub-Process must always contain a Start, End and at least one Presentation Task.



**Decision points** are places where different sets of Presentation Tasks could be required based on some choice. This is a single input node with at least two outgoing directions (1:N). In the current implementation, there is only one way to "resolve" the decision, a Simple Form, which is just a question with multiple answers that the user themselves decide. These will be described more below.



**Connection points** are logical blocks that collect multiple input streams into a single outward direction (N:1). They are used in conjunction with Decision Points. The Misterine App user will not directly experience these nodes.



**Camera evidence** node allows user of Misterine App to take photo of the current state during a running process. Those photos are then a part of the final report shown at the end of the process.

---

#### ADD NODE INTO THE PROCESS

1. Drag & Drop the node from the Toolbox window into the Process Designer
- or
1. Click the node to enter Add Node Mode
2. Add nodes by clicking on the Process Designer
3. End operation by right clicking, pressing the ESC key or clicking outside of the window

---

#### DELETE NODE

1. Right click the node
2. Choose **Delete**
- or
1. Select the node
2. Use the keyboard shortcut specified in Keyboard Shortcuts

---

#### Duplicate Node

1. Right click the node
2. Choose **Duplicate**
- or
1. Select the node
2. Use the keyboard shortcut specified in Keyboard Shortcuts



---

## CONNECT NODES IN SEQUENCE

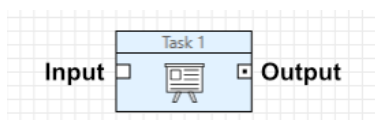


Figure 5 Node input / output

1. Click and drag from the **Output** of one task
2. Drag over and release over the **Input** of another task


Some nodes only provide an Input field or an Output point. Some nodes have multiple output points.

## TASK / SUBPROCESS DETAILS

Access task / subprocess details by selecting a task in Process Designer.


---

### ADD WARNINGS / CAUTIONS TO TASK

1. Select the task in Process Designer
2. Click the  button in the warnings / cautions section of Task Detail
3. Enter the warning message

---

### REORDER WARNINGS / CAUTIONS

1. Select the task in Process Designer
2. Move the items up and down in the list by using the  buttons


The warnings / cautions are displayed in the order from top to bottom in Misterine App.

## DECISION POINT DETAILS

Access decision point details by selecting a decision point in the Process Designer. Newly created decision points come with two outputs and one resolution method present as default.

---


### ADD AN OUTPUT POINT

1. Select the decision point in Process Designer
  2. Click the  button in the Outputs section
  3. Enter the name and description of the output
- or
1. Right click the decision point in Process Designer
  2. Choose **Create Output**

3. Enter the name and the description of the output


---

#### ADD A RESOLUTION METHOD

1. Select the decision point in Process Designer
2. Click the  button in the Resolution Method section
3. Enter the question
4. Specify options

---

#### ADD OPTIONS TO RESOLUTION METHOD

1. Select the decision point in Process Designer
2. Click the  button in the Options section
3. Enter description and choose one of the defined outputs

Each option must have a defined output. This specifies which path of the workflow is followed when the user in App chooses a specific option.

## PROCESS DETAILS



Process details panel manages basic process information, all the equipment, tools and spares that are needed for the process and other resources.

## PROCESS RESOURCES

Process resources are a subset of project resources that will be propagated together with the deployed process. These will then be available in the end device.

---

### ADD NEW PROCESS RESOURCE

1. Click the  button in the Resources tab of Process Details
2. Select an existing resource from the list or import a new resource using the 
3. Click OK


Or

1. Locate the resource for import in the Project Explorer
2. Drag and drop the resource onto the Resources panel


## SCENE DEFINITION

### SCENES


#### CREATE NEW SCENE

1. Right click the task in Process Designer
  2. Choose **Add 3D scene**
- or
1. Select the task in Process Designer
  2. Click the  button in the Process Designer toolbar

#### OPEN SCENE

1. Right click the task with a scene in Process Designer
  2. Choose **Open 3D scene**
- or
1. Select the task with a scene in Process Designer
  2. Click the  button in the Process Designer toolbar
- or
1. Double click the task with a scene in Process Designer

#### DELETE SCENE

1. Right click the task with a scene in Process Designer
  2. Choose **Remove 3D scene**
- or
1. Select the task with a scene in Process Designer
  2. Click the  button in the Process Designer toolbar

### SCENE TEMPLATES

Scene Templates are 3D augmentation scenes without relations to any processes or tasks. Instead, these templates serve as a base for any future scenes created on the tasks in a given project.

Many Scene Templates can exist in the project but only one can be set as the default template. By default, any new scene created in a presentation task will create a copy of this default template. This behavior may be changed in Preferences.

---

#### CREATE SCENE TEMPLATE

1. Right click the Scene Templates folder in Project Explorer
2. Choose **Create new scene template**
3. Rename the newly created template

---

#### OPEN SCENE TEMPLATE

1. Right click the scene template in Project Explorer
  2. Choose **Open Scene**
- or
1. Double click the scene template in Project Explorer


---

#### ADD SCENE TEMPLATE TO AN EXISTING TASK

1. Select the task in Process Designer
  2. Right click the scene template in Project Explorer
  3. Choose **Add to Selected Task**
- or
1. Drag & drop the scene template from Project Explorer onto the task in Process Designer

---

#### TURN EXISTING SCENE ON A TASK INTO A SCENE TEMPLATE

1. Right click task with scene in Process Designer
  2. Choose **Make Template Scene**
- or
1. Select the task with scene in Process Designer
  2. Click the  button in Process Designer toolbar

---

#### MARK A SCENE TEMPLATE AS DEFAULT

1. Right click a non-default scene template in Project Explorer
2. Choose **Set Default**

## SCENE INTERFACE OVERVIEW

The interface of the scene editor has 7 different windows with the most important 3D view in the center.

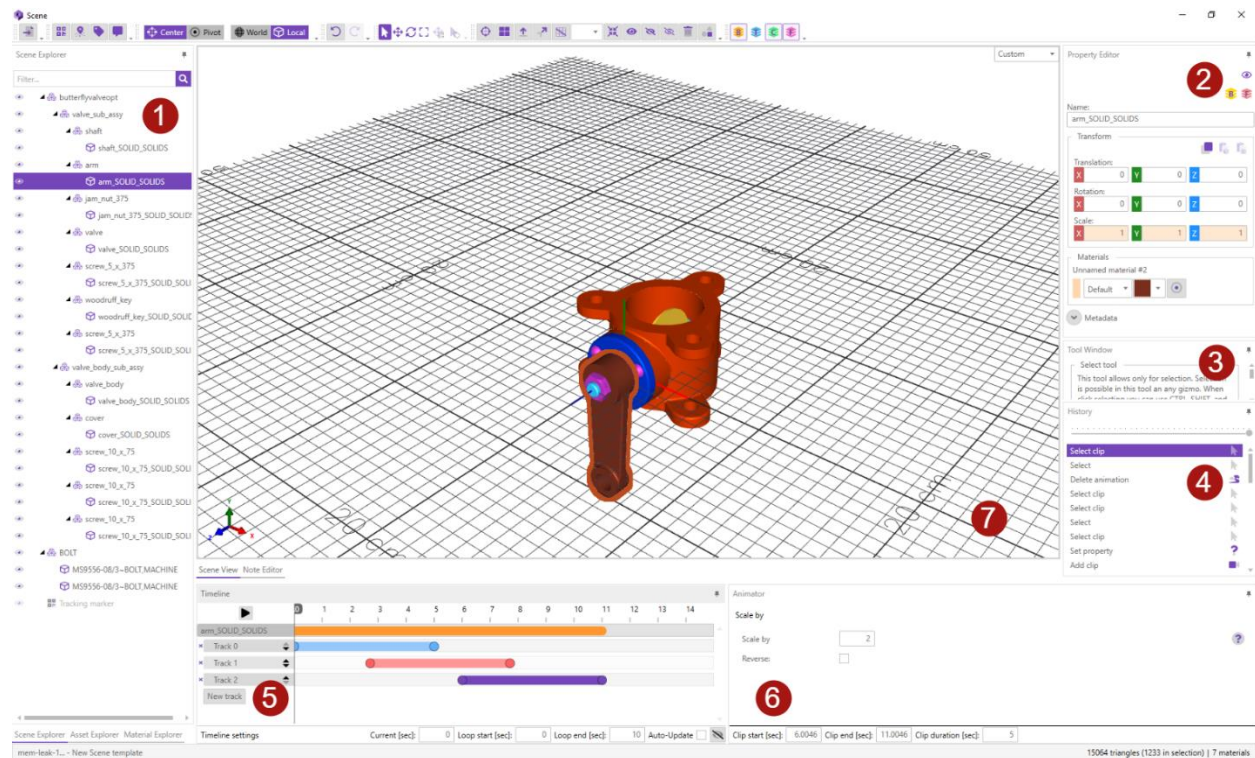


Figure 6 Misterine Studio Scene Designer UI


1. Use **Scene explorer** to select and filter objects in the scene. This window is shared **Asset explorer** and **Material explorer**.
2. **Property editor** displays properties of current selection. Some properties can be even shared in multi selection.
3. The scene editor has multiple tools to help with positioning of objects with gizmos being the most prominent. When you select a tool, its properties will be shown in **Tool window**.
4. **History** displays all past actions. The only exception is a selection that is not saved when the window is closed.
5. The **Timeline** is used to create and position animations. The orange-colored strip represents an animation. A blue color represents a generator and a red color is used for a keyframed clip.
6. When an animation clip is selected, its properties are shown in the **Animator**.

## SCENE CREATION

### SCENE OBJECTS

A scene object is every object that is represented as a single item in the Scene Explorer. That can be, e.g., imported model node, tracking marker, label, positioning node, etc.

#### SELECT SCENE OBJECT

1. Click the one of the following buttons  in the Scene Designer toolbar or use the keyboard shortcut specified in Keyboard Shortcuts
2. Select on or more scene objects by clicking on the nodes in the Scene Explorer or by clicking on the 3D models in the Scene View

It is possible to select multiple scene objects using keyboard shortcuts specified in Keyboard Shortcuts.

#### MOVE SCENE OBJECT

1. Drag & Drop the selected scene object(s) in the Scene Explorer between two scene objects to insert them at that position

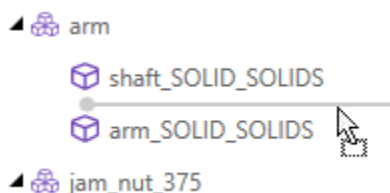


Figure 7 Move scene object(s) between nodes

or

1. Drag & Drop the selected scene object(s) in the Scene Explorer to another scene object to insert them as last children of that scene object



Figure 8 Move scene object(s) under a node

Move operation will not be applied to the selected nodes that violate any of the following rules:

- A scene object cannot be moved under itself or its descendant
- Some scene objects like labels, tracking markers, interactive anchors cannot be moved under other scene objects
- Some scene objects like labels, tracking markers, interactive anchors, and notes cannot become a target of a move operation

---

## SET NAME





1. Select a scene object in the Scene Explorer or the Scene View
2. Enter the scene object name in the Property Editor



Figure 9 Set scene object name

---

## SET LAYER

1. Select a scene object in the Scene Explorer or the Scene View
2. Click on one of the following available buttons     to add the scene object to the proper layer or remove it from that layer

Scene objects can be moved only to some layers based on their type.

B – Background


T – Tracking

C – Context


F – Foreground

---

## SET VISIBILITY


1. Select a scene object in the Scene Explorer or the Scene View
2. Click the  button in the Property Editor
3. A dialog appears if the visibility is turned on and at least one of the predecessors is not visible.
4. Click **Yes** if you want to turn on the visibility of all predecessors or click **No** if you want to turn the visibility on only for the selected scene object

or

1. Click the  button of the corresponding scene object in the Scene Explorer


---

## SHOW SELECTED

1. Click the  button in the Scene Designer toolbar or use the keyboard shortcut specified in Keyboard Shortcuts

---


## HIDE SELECTED

1. Click the  button in the Scene Designer toolbar or use the keyboard shortcut specified in Keyboard Shortcuts



---

## HIDE UNSELECTED

1. Click the  button in the Scene Designer toolbar or use the keyboard shortcut specified in Keyboard Shortcuts

---

## TRANSLATE SCENE OBJECT


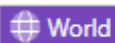
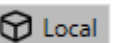
1. Select a scene object in the Scene Explorer or the Scene View
2. Enter the translation vector value in the Property Editor



Figure 10 Translate scene object

---

## TRANSLATE SCENE OBJECT USING GIZMO OR MOVE TOOL

1. Select a scene object in the Scene Explorer or the Scene View
2. Click the  button in the Scene Designer toolbar or use the keyboard shortcut specified in Keyboard Shortcuts
3. Toggle the  World  Local button in the Scene Designer toolbar to select the desired translation mode
  - a. Drag translation gizmo to translate the scene object along one or two axes to the desired location

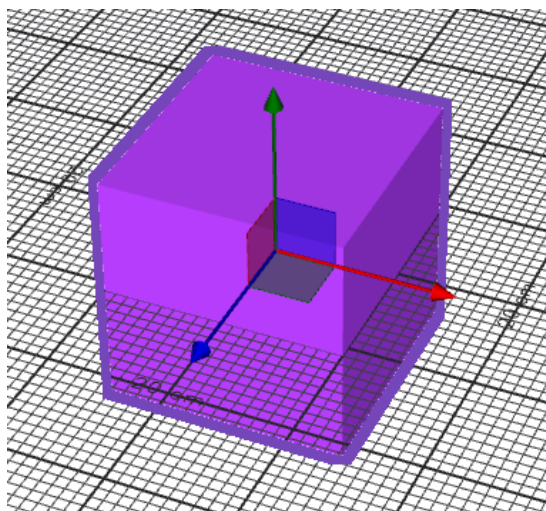


Figure 11 Translate scene object using gizmo

- b. Enter the global position or a vector to move the scene object along axis in the Tool Window

Move tool

Position

X	37.2994	Y	0	Z	-12.2491
---	---------	---	---	---	----------

Move along axis

X	0	Y	0	Z	0
---	---	---	---	---	---

Figure 12 Translate scene object using move tool

---

## ROTATE SCENE OBJECT

1. Select a scene object in the Scene Explorer or the Scene View
2. Enter the rotation vector value in the Property Editor

Rotation:


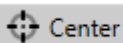

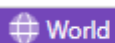
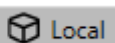
X	0	Y	0	Z	0
---	---	---	---	---	---

Figure 13 Rotate scene object

This action may not be available for some scene object types.

---

## ROTATE SCENE OBJECT USING GIZMO OR ROTATE TOOL

1. Select a scene object in the Scene Explorer or the Scene View
2. Click the  button in the Scene Designer toolbar or use the keyboard shortcut specified in Keyboard Shortcuts
3. Toggle the   button in the Scene Designer toolbar to select the desired center of rotation
4. Toggle the   button in the Scene Designer toolbar to select the desired rotation mode
  - a. Drag rotation gizmo to rotate the scene object around one axis to the desired position

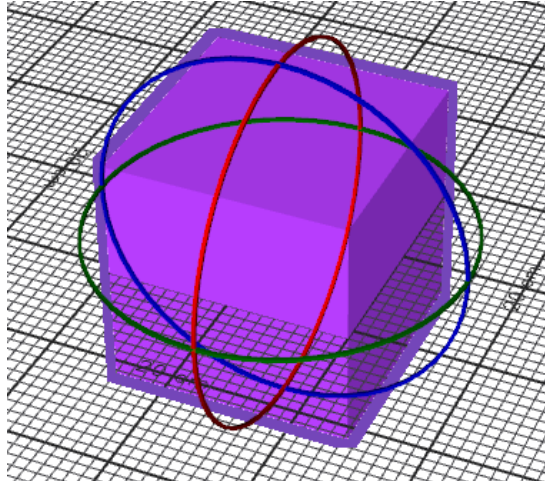


Figure 14 Rotate scene object using gizmo

- a. Enter the global rotation or a vector to rotate the scene object along axis in the Tool Window

Rotate tool					
Rotation center					
X	37.2994	Y	0	Z	-12.2491
Rotation					
X	0	Y	45	Z	0
Rotate along axis					
X	0	Y	0	Z	0

Figure 15 Rotate scene object using rotate tool

---

## SCALE SCENE OBJECT

1. Select a scene object in the Scene Explorer or the Scene View
2. Enter the scale vector value in the Property Editor

Scale:					
X	1	Y	1	Z	1


Figure 16 Scale scene object

This action may not be available for some scene object types.

Scaling can be done only in local space.

---

## SCALE SCENE OBJECT USING GIZMO

1. Select a scene object in the Scene Explorer or the Scene View
2. Click the  button in the Scene Designer toolbar or use the keyboard shortcut specified in Keyboard Shortcuts

3. Drag scale gizmo to scale the scene object along one, two, or all axes to the desired extent

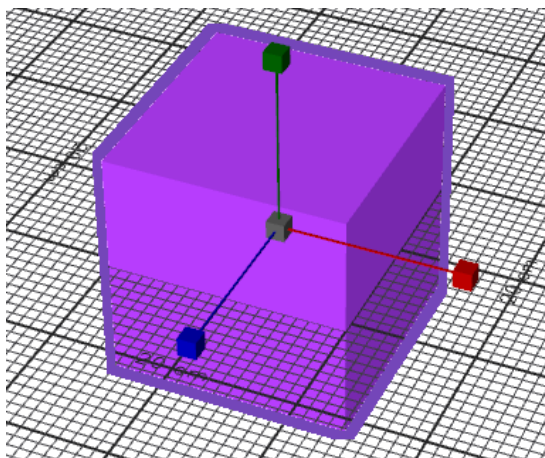



Figure 17 Scale scene object using gizmo

Scaling can be done only in local space.


---

## DELETE SCENE OBJECT

1. Initiate delete operation
  - a. Select one or more scene objects in the Scene Explorer or the Scene View
  - b. Click the  button in the Scene Designer toolbar or use the keyboard shortcut specified in Keyboard Shortcuts
- or
- a. Right click the scene object in the Scene Explorer
- b. Choose **Delete**
2. A dialog appears if any of the deleted nodes has a child that is not in a set of deleted nodes
  - a. Click **Reparent/Separate** if you want to keep the child nodes or click **Remove all** if you want to delete the whole hierarchies including children of the deleted nodes


---

## MOVE SELECTED OBJECTS TO ORIGIN

1. Select a scene object in the Scene Explorer or the Scene View
2. Click the  button in the Scene Designer toolbar

---

## DECIMATE SELECTED OBJECT(S)

1. Click the  button in the Scene Designer toolbar
2. Set the proper decimation settings parameters
3. Click **Decimate**

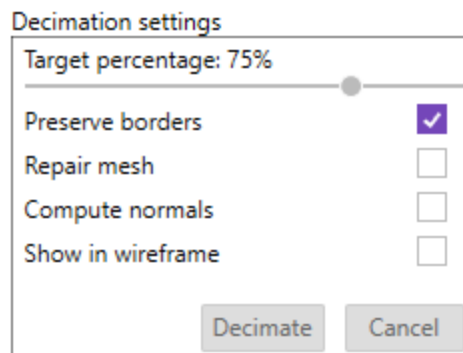



Figure 18 Decimation settings

## MODELS

### IMPORT NEW MODEL

1. Use the keyboard shortcut specified in Keyboard Shortcuts
2. Navigate to the file
3. Click **Open**

or

1. Click the  button in the Scene Designer toolbar
2. Navigate to the file
3. Click **Open**

or

1. Drag & Drop the file into the Scene Explorer or the Scene View

### TESSELLATION SETTINGS

This dialog may appear during model import when a tessellation of imported model geometry is required.

1. Change the Angular and Linear deflection values if needed
2. Click **Next**
3. Wait for the action to finish
4. Click **Finish**

### MODEL SIZE

This warning dialog may appear if the imported model exceeds the size limits concerning imported model units. That may negatively affect its appearance when displayed in Misterine App.

1. Select the proper model units in the drop-down menu.
2. Click **OK**

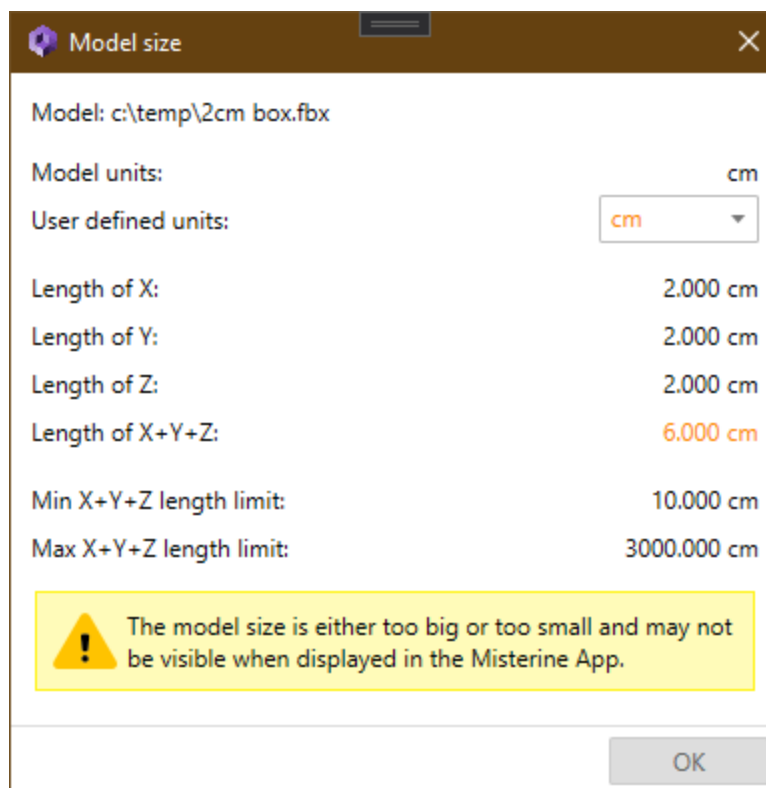


Figure 19 Model size dialog

#### INSERT POSITIONING NODE

1. Right click the model node in the Scene Explorer
2. Choose **Insert positioning node above**

This operation can be done only with models and other positioning nodes.

#### FLIP NORMALS/FACES

2. Right click the model node in the Scene Explorer
3. Choose **Flip normals/Flip faces**

This operation can be done only with models and other positioning nodes.

#### MODEL IMPORT

#### FIXING MODEL ISSUES

1. Open **Preferences**
2. Navigate to Scene -> Model import – 3D Model formats
3. Toggle the needed settings

#### LIGHTING ISSUES

1. Open **Preferences**
2. Navigate to Scene -> Model import – 3D Model formats

3. Enable Attempt to fix inward-facing normals

---


OR

1. Check normals by toggling **Render face normals** or **Render vertex normals**
2. Modify the object in 3D editor of your choice


## TRACKING MARKERS

---

### CREATE TRACKING MARKER

1. Click the  button in the Scene Designer toolbar or use the keyboard shortcut specified in Keyboard Shortcuts

### SNAP TRACKING MARKER TO OBJECT SURFACE

1. Select a tracking marker in the Scene Explorer or the Scene View
2. Click the  button in the Scene Designer toolbar or use the keyboard shortcut specified in Keyboard Shortcuts
  - a. Click and hold the left mouse button
  - b. Place the cursor to the position over an object where you want to snap the tracking marker
  - c. Release the left mouse button to finish snapping

or

  - a. Place the cursor to the position over an object where you want to snap the tracking marker
  - b. Click the left mouse button to perform snapping

### SET TRACKING MARKER ID

1. Select a tracking marker in the Scene Explorer or the Scene View
2. Enter the tracking marker ID value in the Property Editor



Figure 20 Set tracking marker ID

### SET TRACKING MARKER FORMAT

1. Select a tracking marker in the Scene Explorer or the Scene View
2. Enter the tracking marker format in the drop-down menu in the Property Editor



Figure 21 Set tracking marker format

### SET TRACKING MARKER PHYSICAL SIZE

---


1. Select a tracking marker in the Scene Explorer or the Scene View
2. Enter the tracking marker physical size in the Property Editor

Physical size [cm]:

Figure 22 Set tracking marker physical size


---

#### SAVE TRACKING MARKER TO PDF

1. Select a tracking marker in the Scene Explorer or the Scene View
2. Click the  button in the Property Editor
3. Select the destination location and PDF file name
4. Click **Save**

---


#### DISPLAY TRACKING MARKER IN PDF

1. Select a tracking marker in the Scene Explorer or the Scene View
2. Click the  button in the Property Editor

### INTERACTIVE ANCHORS

---


#### CREATE INTERACTIVE ANCHOR

1. Click the  button in the Scene Designer toolbar or use the keyboard shortcut specified in Keyboard Shortcuts

There can be only one interactive anchor per scene.

---

#### SNAP INTERACTIVE ANCHOR TO OBJECT SURFACE

1. Select an interactive anchor in the Scene Explorer or the Scene View
2. Click the  button in the Scene Designer toolbar or use the keyboard shortcut specified in Keyboard Shortcuts
  - a. Click and hold the left mouse button
  - b. Place the cursor to the position over an object where you want to snap the interactive anchor
  - c. Release the left mouse button to finish snapping


or

  - a. Place the cursor to the position over an object where you want to snap the interactive anchor
  - b. Click the left mouse button to perform snapping




## LABELS

### CREATE LABEL

1. Select an object in the Scene Explorer or the Scene View
2. Click the  button in the Scene Designer toolbar or use the keyboard shortcut specified in Keyboard Shortcuts
3. Enter the label text
4. Click **OK**

### MOVE LABEL ANCHOR ON THE OBJECT

1. Select a label in the Scene Explorer or the Scene View
2. Click the  button in the Scene Designer toolbar or use the keyboard shortcut specified in Keyboard Shortcuts
  - a. Click and hold the left mouse button
  - b. Place the cursor to the position over an object where you want to move the label anchor
  - c. Release the left mouse button to finish moving

or

  - a. Place the cursor to the position over an object where you want to move the label anchor
  - b. Click the left mouse button to perform moving

Label anchor can be moved only on the object the label is attached to.

### SET LABEL TEXT


1. Select a label in the Scene Explorer or the Scene View
2. Enter the label text in the Property Editor



Figure 23 Set label text

## NOTES

### CREATE NOTE

1. Click the  button in the Scene Designer toolbar or use the keyboard shortcut specified in Keyboard Shortcuts
2. Select preferred aspect ratio for the note
3. Click **OK**

---

#### SET NOTE SIZE

1. Select a note in the Scene Explorer or the Scene View
2. Enter the note size in the Property Editor

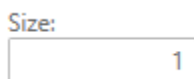


Figure 24 Set note size

---

#### ORIENT NOTE TO USER

1. Select a note in the Scene Explorer or the Scene View
2. Click the button to enable/disable note orientation to user

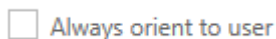


Figure 25 Orient note to user


---

#### ADD NOTE TEXT

1. Select **Text** in the Note editor toolbox on the right side
2. Click wherever on the note area to add the text element
3. Click multiple times to add another text elements or right-click to finish adding
4. Click created text element to select it
5. Enter custom text

---

#### ADD NOTE IMAGE

1. Select **Image** in the Note editor toolbox on the right side
2. Click wherever on the note area to add the image element
3. Click multiple times to add another image elements or right-click to finish adding
4. Click created image element to select it
5. Click **Choose image...** to add specific image
6. Choose from already imported images or click  to add a new one


---

#### RESIZE TEXT/IMAGE ELEMENT

1. Click text/image element to select it

2. Choose one of eight resize handlers
3. Click and hold the chosen resize handler
4. Optionally press and hold the Shift key to keep current aspect ratio of the selected element
5. Change size of the element by dragging mouse until the required size is achieved
6. Release the mouse to finish resizing

or

1. Click text/image element to select it
2. In the top bar change width or height of the selected element
3. Optionally click  button to keep current aspect ratio of the selected element

---

#### MOVE TEXT/IMAGE ELEMENT

1. Click text/image element to select it
2. Click and hold the edge of the selected element (for image, the whole area is available for the click)
3. Move it by moving mouse to required location
4. Release mouse to finish moving

or



1. Click text/image element to select it
2. In the top bar change horizontal or vertical position of the selected element

---

#### ZOOM

1. Move mouse cursor to point of interest
2. Mouse wheel up/down to zoom in/out

or

1. In the top bar click  button to zoom in,  button to zoom out or  button to reset zoom to 100%





---

#### CHANGE Z-ORDER

1. Right-click text/image element required to change a z-order to
2. Choose one of the z-order changing options
  - a. **Bring to Front** for changing z-order to be in front of all other elements
  - b. **Bring forward** for changing z-order to be one step closer to the front
  - c. **Send to Back** for changing z-order to be behind all other elements
  - d. **Send backward** for changing z-order to be one step farther from the front


or

1. Click text/image element required to change a z-order to
2. In the top bar click


- a.  button to bring it to front
- b.  button to bring it forward
- c.  button to send it backward
- d.  button to send it to back

## SCENE VIEW


### CENTER ON SELECTION

- Click the  button in the Scene Designer toolbar or use the keyboard shortcut specified in Keyboard Shortcuts


### SWITCH SCENE LAYOUT

- Click the  button in the Scene Designer toolbar to switch to a 4-view layout or use the keyboard shortcut specified in Keyboard Shortcuts


or

- Click the  button in the Scene Designer toolbar to switch to a perspective view or use the keyboard shortcut specified in Keyboard Shortcuts


### RENDER FACE NORMALS

- Click the  button in the Scene Designer toolbar to render face normals or use the keyboard shortcut specified in Keyboard Shortcuts


### RENDER VERTEX NORMALS

- Click the  button in the Scene Designer toolbar to render vertex normals or use the keyboard shortcut specified in Keyboard Shortcuts

### SHOW/HIDE GRID

- Click the  button in the Scene Designer toolbar to hide grid or use the keyboard shortcut specified in Keyboard Shortcuts

or

1. Click the  button in the Scene Designer toolbar to show grid or use the keyboard shortcut specified in Keyboard Shortcuts


---

#### CHANGE BACKGROUND COLOR

1. Click the color picker in the Scene Designer toolbar
2. Choose the proper color in a color picker
3. Click **OK**

---

#### SHOW/HIDE LAYER

1. Click one of the following buttons  in the Scene Designer toolbar
  - B – Background
  - T – Tracking
  - C – Context
  - F – Foreground

---

#### CHANGE SCENE VIEW ORIENTATION

1. Click the drop-down menu in right up corner of the selected view in the Scene View
2. Select the proper orientation

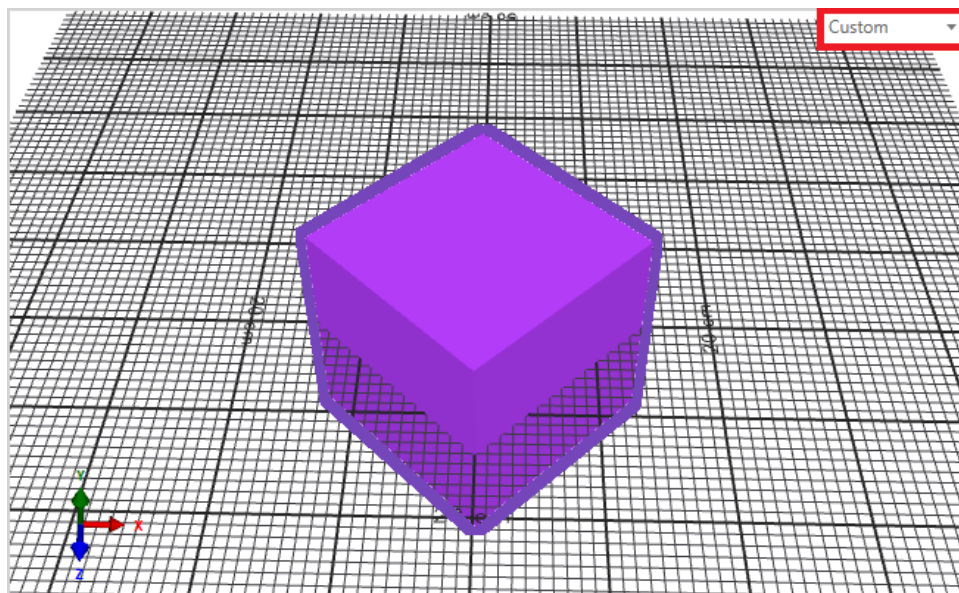




Figure 26 Change scene view orientation

---

#### TAKE SCENE VIEW SNAPSHOT

1. Select the desired scene view (if the 4-view layout view is enabled)
2. Click the  button in the Scene Designer toolbar

3. Click the  button to pick the destination folder
4. Enter the resource name

Resource name

Figure 27 Enter scene view snapshot name

5. Select the image format using a drop-down menu

Image type

Figure 28 Select scene view snapshot image format

6. Select the image aspect ratio using a drop-down menu

Aspect ratio

Figure 29 Select scene view snapshot aspect ratio

- a. If the **Custom** option was selected, enter custom aspect ratio values

Aspect ratio

x

Figure 30 Select scene view snapshot custom aspect ratio

7. Select the target resolution using a drop down-menu

Target resolution

Figure 29 Select scene view snapshot target resolution

- a. If the **Custom** option was selected, enter custom Width and Height values



Width	<input type="text" value="600"/>	px	} 
Height	<input type="text" value="450"/>	px	

Figure 310 Select scene view snapshot custom target resolution

- b. Click the  button to keep proportions if needed
8. Click **Save**

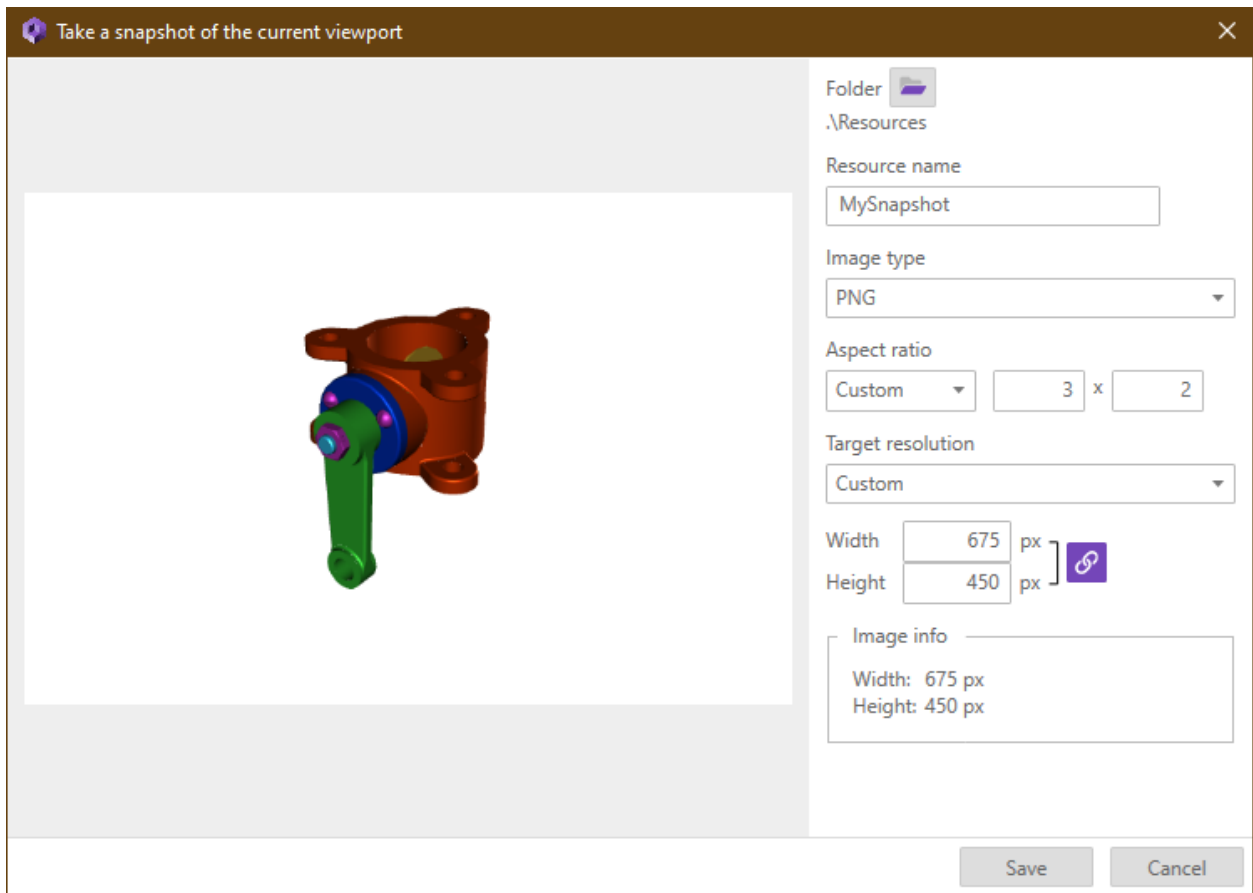


Figure 31 Take scene view snapshot

---

## SHOW SCENE STATISTICS

- Click the button in the right side of the Scene Designer status bar


73796 triangles (12 in selection) | 14 materials

Figure 32 Scene statistics button

## ANIMATIONS

---

### CREATE NEW ANIMATION

- Select an object
  - Press the  button to create an animation with an empty track.
- or

1. Right click on the object in **Timeline**.
2. Pick animation from the context menu.

---

#### MOVE CLIP

1. Hover over the clip.
2. Press left mouse button.
3. Drag left and right.

---

#### MOVE CLIP BETWEEN TRACKS

1. Press Alt and left mouse button over the clip.
2. Drag it up/down.

---

#### RESIZE CLIP

1. Hover over the circle at the start/end of the clip.
2. Press left mouse button.
3. Drag left and right.

or

1. Select the clip.
2. Type the specific values in the **Animator**.


---

#### COPY CLIP

1. Select the clip.
2. Press Ctrl+C.
3. (Optional) Change the current time.
4. Highlight a target track.
5. Press Ctrl+V.

---

#### MOVE TRACK

1. Use the  buttons to move the track up/down.

or

1. Hover over the track name.
2. Drag the track up/down.

---

#### DELETE CLIP

1. Right click over a clip.
2. Select **Delete** from the context menu.




or

1. Right click over a clip.
2. Press **D** to select the context menu item.

or

1. Select a clip.
2. Press **Delete** on your keyboard.

## DELETE TRACK

1. Press the  next to the track name.

or

1. Right click on the track name.
2. Select **Delete** from the context menu.

## SPLIT KEYFRAMED CLIP

1. Open context menu for a keyframed clip (the red-colored)
2. Select Split at current time

## CREATE KEYFRAMES

1. Select a keyframed clip (the red-colored).
2. Press **Edit** button in the **Animator**.
3. Set the animator time (red).
4. Create keyframe
  - a. Hit **K** on your keyboard to animate all.

or

  - a. Right click on a property in the **Animator**.
  - b. Select **Set key** from the context menu.

or

  - a. Modify a property using a gizmo or **Property editor**.

## DELETE KEYFRAME

1. Right click on a keyframe.
2. Select **Delete** from the context menu.

## SAMPLING SPECIFIC TIME

1. Set the time in the **Timeline** (grey indicator)
2. Set the time in the **Animator** (red indicator)

3. Create keyframe


## ANIMATION IMPORT

### SIMPLIFYING IMPORTED ANIMATIONS

1. Open **Preferences**
2. Navigate to Scene -> Animation import – Simplify
3. Set your preferred method (default Adaptive)
4. Delete and import the object again

## ASSETS

### CREATE TOOL ASSET

4. Copy the model file to the *Assets/Tools* directory located in the project folder
5. Click the  button in the Asset Explorer toolbar to refresh the asset list

### CREATE MATERIAL ASSET

1. Right click the material in the Material Explorer under the proper tab
2. Choose **Create asset**
3. Enter a unique material asset name
4. Click **OK**

### CREATE ANIMATION ASSET

1. Right click the animation in the Timeline
2. Choose **Save animation as Asset**
3. Enter a unique animation asset name
4. Click **OK**

### CREATE CLIP ASSET

1. Right click the clip in the Timeline
2. Choose **Save clip as Asset**
3. Enter a unique clip asset name
4. Click **OK**

### ADD MODEL/TOOL ASSET TO SCENE

1. Right click the model/tool asset in the Asset Explorer
  2. Choose **Add to scene**
- or

1. Drag & Drop the model/tool asset from the Asset Explorer into the Scene Explorer or the Scene View

---

#### DELETE ASSET

1. Right click the asset in the Asset Explorer
  2. Choose **Delete**
- or
1. Select the asset in the Asset Explorer
  2. Press Delete key

Model assets can be deleted only if they are not used in any scene.

---

#### APPLY ANIMATION ASSET

1. Drag & Drop the animation asset from the Asset Explorer into the Timeline to add the animation at the time under the cursor
- or
1. Right click the animation asset in the Asset Explorer
  2. Choose **Add to timeline** to add the animation at the current time

---

#### APPLY CLIP ASSET


1. Drag & Drop clip asset from the Asset Explorer into animation/track in the Timeline to add the clip at the time under the cursor
- or
1. Right click the clip asset in the Asset Explorer
  2. Choose **Add to timeline** to add the clip to animation/track at the current time

---

### MATERIALS


---

#### CREATE MATERIAL

1. Click the  button in the Material Explorer toolbar

---


#### DELETE MATERIAL

1. Select the material in the Material Explorer under the proper tab
  2. Click the  button in the Material Explorer toolbar
- or
1. Right click the material in the Material Explorer under the proper tab
  2. Choose **Delete material**

Only unused materials and material assets can be deleted.


---

#### APPLY MATERIAL TO SELECTION

1. Right click the material in the Material Explorer under the proper tab
  2. Choose **Assign to selection**
- or
1. Select the material in the Material Explorer under the proper tab
  2. Click the  button in the Material Explorer toolbar

---

#### ADD RELATED OBJECTS TO SELECTION

1. Right click the material in the Material Explorer under the proper tab
  2. Choose **Add related objects to selection**
- or
1. Select the material in the Material Explorer under the proper tab
  2. Click the  button in the Material Explorer toolbar

Only used materials have related objects.

---

#### APPLY MATERIAL TO 3D OBJECT

1. Drag & Drop the material asset from the Material Explorer under the proper tab on the proper object in the Scene View

---

#### RENAME MATERIAL

1. Click the text input field of the material in the Material Explorer under the proper tab
2. Enter a unique material name

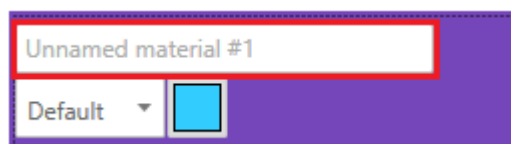


Figure 33 Rename material

Material assets cannot be renamed.

---

#### SET MATERIAL SHADER TYPE

1. Click the drop-down menu of the material in the Material Explorer under the proper tab
  2. Choose the proper shader type
- or

1. Select an object in the Scene Explorer or the Scene View
2. Click the drop-down menu of the material in the Property Editor in the Materials group
3. Choose the proper shader type
4. A dialog appears if the modified material is used by other objects not in the selection
5. Click **Yes** if you want to modify all occurrences of the material or click **No** if you want to update just the occurrences within the selection



Figure 34 Set material shader type

---

## SET MATERIAL COLOR

1. Click the color picker of the material in the Material Explorer under the proper tab
  2. Choose the proper color in a color picker
  3. Click **OK**
- or
1. Select an object in the Scene Explorer or the Scene View
  2. Click the color picker of the material in the Property Editor in the Materials group
  3. Choose the proper color in a color picker
  4. Click **OK**
  5. A dialog appears if the modified material is used by other objects not in the selection
  6. Click **Yes** if you want to modify all occurrences of the material or click **No** if you want to update just the occurrences within the selection




Figure 35 Set material color

The material color changes are reflected in the Scene View and also can be previewed in the Material Preview.

---

## REPLACE MATERIAL

1. Select an object in the Scene Explorer or the Scene View
2. Click the  button of the material in the Property Editor in the Materials group
3. Select the material the to replace with in the Select material dialog under the proper tab
4. Click **OK**

---

### FILTER MATERIALS BY NAME

1. Click the text input field in the Material Explorer toolbar
2. Enter the filter text

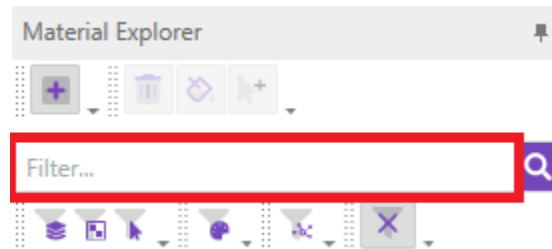



Figure 36 Filter materials by name


---

### FILTER MATERIALS IN VISIBLE LAYERS

1. Click the  button in the Material Explorer toolbar


---

### FILTER TEXTURED MATERIALS

1. Click the  button in the Material Explorer toolbar


---

### FILTER MATERIALS IN SELECTION

1. Click the  button in the Material Explorer toolbar


---

### FILTER MATERIALS BY SHADER TYPE

1. Click the  button in the Material Explorer toolbar
2. Select the proper shader type in the drop-down menu


---

### FILTER MATERIALS BY THE GIVEN NUMBER OF SHARING NODES

1. Click the  button in the Material Explorer toolbar
2. Enter the number of sharing nodes
3. Select the proper comparison operator from the drop-down menu

---

### RESET ALL MATERIAL FILTERS

1. Click the  button in the Material Explorer toolbar

## PROCESS VALIDATION

Before deployment all processes must be validated. This validation is triggered automatically before every deployment and will disallow any progress until all validation issues are resolved.

### SHOW VALIDATION STATUS

There are several ways to observe the current state of the opened process.

---

#### TRIGGER VALIDATION AND DISPLAY RESULTS

1. Right click the process in Project Explorer
2. Choose **Validate Process**

The validation result is displayed in a dialog window.

---

#### DISPLAY CURRENT VALIDATION STATUS (DIALOG)

The validation preview at the bottom right corner of the screen shows the current number of warnings and errors in the opened process.

Click the button for detailed dialog window.

---

#### DISPLAY CURRENT VALIDATION STATUS (PANEL)

Double click the warning / error in the validation panel to navigate to the invalid element.

Navigation is not available for all types of validation errors.

## PROCESS DEPLOYMENT

To use processes in Misterine App, the processes must first be deployed. Misterine Studio provides several options of process deployment.

---

### DEPLOY TO THE EMBEDDED SERVER

1. Right click the process in Project Explorer
  2. Choose **Deploy Process to Embedded Server**
- or
1. Select the process in Project Explorer
  2. Go to **Process > Deploy Process to Embedded Server**
  3. Confirm Storage Options and click **Next**
  4. Confirm Deployment info and click **Deploy**
  5. Wait for the operation to complete

The package is only available while the finished deployment screen is opened.

---

### DEPLOY TO THE ONLINE SERVER

1. Right click the process in Project Explorer
  2. Choose **Deploy Process to Server**
- or
1. Select the process in Project Explorer
  2. Go to **Process > Deploy Process to Server**
  3. Log in if not logged in already
  4. Confirm Storage Options (deployment server, check visibility of the process) and click **Next**
  5. Confirm Deployment info and click **Deploy**
  6. Wait for the operation to complete

---

### CHANGE DEPLOYMENT SERVER ADDRESS

1. Go to Edit > Preferences > Deployment
2. Enter a valid hostname / IP address of the deployment server
3. Click Test Connection to check connection

You will be asked to log out when changing between servers.



## PROCESS EXPORT

Processes in Misterine Studio can be exported to the HTML format.

---

### EXPORT PROCESS TO HTML

1. Right click the process in Project Explorer
  2. Choose **Export Process to HTML**
- or
1. Select the process in Project Explorer
  2. Go to **Project > Export > Export Process to HTML**
  3. Choose destination for the exported folder
  4. Click **Select Folder**
  5. Wait for the operation to complete

Only valid processes may be exported.

Result of the export is put into a new folder.

---

### SETUP EXPORT CSS FILE

1. Go to **Edit > Preferences > Export > HTML Export**
2. Enter or paste in the CSS code

CSS style may be reset to default by clicking the **Reset to Default** button.

## APPENDIX

### KEYBOARD SHORTCUTS

#### Project Explorer

UP	Select project item below the last selected project item
DOWN	Select project item above the last selected project item
SPACE	Expand / Collapse folder
DELETE	Delete selection
CTRL + C	Copy project item (only for Process)
CTRL + V	Paste project item (only for Process)
CTRL + D	Duplicate project item (only for Process)

#### Process Editor

CTRL + C	Copy current selection
CTRL + V	Paste copied selection on a mouse position or on a position of a source with an offset (if mouse is not over edit area)
CTRL + D	Duplicate current selection
DELETE	Delete current selection
CTRL+Z	Undo
CTRL+Y	Redo
ESC or RMB	Cancel node creating action if it's in progress
Mouse wheel	Zoom in / out

#### Validation

UP	Select validation item above currently selected validation item
DOWN	Select validation item below currently selected validation item
ENTER / Double LMB	Navigate to a place relative to selected validation item

#### Rich Text Editor

CTRL + B	Make text bold
CTRL + I	Make text italic
CTRL + U	Make text underlined

CTRL + =	Make text subscripted
CTRL + SHIFT + =	Make text superscripted
CTRL + SPACE	Open popup with suggestions
UP	Move to a suggestion above currently selected suggestion (only Suggestions popup)
DOWN	Move to a suggestion below currently selected suggestion (only Suggestions popup)
ENTER	Confirm currently selected suggestion (only Suggestions popup)

### Scene Editor

CTRL + F	Focus the search field (type in and press Enter to search)
CTRL + I	Import a model
CTRL + Z	Undo
CTRL + Y	Redo
CTRL + 1	Add a tracking marker
CTRL + 2	Add an interactive anchor
CTRL + 3	Add a label to the selection
CTRL + 4	Add a note
CTRL + SHIFT + M	Show / Hide radial menu
ALT + C	Move the selection to origin
CTRL + H	Hide selected
CTRL + SHIFT + H	Show selected
CTRL + SHIFT + I	Inverse selection
Q	Select tool
W	Translate tool
E	Rotate tool
R	Scale tool
T	Snapping tool
Y	Move label line start position
F	Focus on selection (focus all if nothing is selected)
DELETE	Delete selected object (if in a text field, it works on the text inside; if clip is selected then the clip is deleted first)
CTRL + A	Select all
CTRL + SHIFT + A	Select all that is visible (based on the state of an object)
CTRL + D	Deselect all
CTRL + V	Insert a model (only if an object file in Windows Explorer is selected and copied before)

LMB	Select object in the scene / Deselect all
CTRL + LMB	Toggle selection
SHIFT + LMB	Add to selection
ALT + LMB	Select common parent of the current selection when clicked on
RMB	Rotate around a target (displayed as a small red sphere). If the mouse is over an object, the target is the 3D point under the mouse cursor. While rotating, the red sphere is connected to its projection to XZ plane with yellow line.
Shift + LMB + Vertical mouse movement	Zoom to an object under the mouse (if any), or to the target (red sphere)
Mouse wheel	Zoom to center
RMB + Mouse wheel	Zoom to the center of rotation
CTRL + Space	Toggle between multi-view layout and single-view layout

### Scene Explorer

CTRL + RIGHT	Move the horizontal scrollbar to the right
CTRL + LEFT	Move the horizontal scrollbar to the left
SHIFT+SCROLL	Move the horizontal scrollbar
CTRL + UP	Move the focus up
CTRL + DOWN	Move the focus down
SHIFT+UP/DOWN	Add to selection when moving from focused object. Removes from selection when going back.
RIGHT	Expand an assembly
LEFT	Collapse an assembly
UP	Select the node up from the current one
DOWN	Select the node down from the current one
CTRL+SPACE	Select / Deselect focused object.
CTRL+ENTER	Select / Deselect focused object.
HOME	Select the first object in the tree
END	Select the last object in the tree
CTRL+HOME	Focus the first object in the tree
CTRL+END	Focus the last object in the tree
SHIFT+HOME	Select all between last focused and top of the tree
SHIFT+END	Select all between last focused and end of the tree

**Animator**

- K Create keyframe at current time
- C Set the time to current time (Clip start/end time input field must be focused)

**Timeline**

- CTRL + C Copy the selected clip
- CTRL + V Paste the content of clipboard to highlighted track at current time – can be, for example, a selected clip (if the clipboard content is incompatible to paste, nothing happens)
- CTRL + Drag Duplicate and move the clip
- ALT + Drag Move the clip between tracks
- SHIFT + Drag Snap the clip to clip's endpoints, 0, and current time

**History**

- HOME Focus on the first object in the history
- END Focus on the last object in the history
- UP Focus on node up from the top
- DOWN Focus on node down from the top
- SPACE Move to this point in history

## SCENE EXPLORER FILTERING

Scene Explorer offers basic filtering of items based on their name, or special filters for more restrictive filtering. All possible filters are listed in a table below.

:m {VALUE}	Filters meshes with name containing {VALUE}
:nm {VALUE}	Filters non-meshes with name containing {VALUE}
:tm {VALUE}	Filters tracking markers with name containing {VALUE}
:ia {VALUE}	Filters interactive anchors with name containing {VALUE}
:l {VALUE}	Filters labels with name containing {VALUE}
:a {VALUE}	Filters nodes with animations with name containing {VALUE}
:ma {VALUE}	Filters nodes with materials with name containing {VALUE}
:n {VALUE}	Filters notes with name containing {VALUE}
:{KEY}	Filters nodes with property key containing {KEY} and with property value containing {VALUE}
{VALUE}	(only for models imported from JT file)

If **{VALUE}** is unspecified, the related restriction is ignored

Example:

:tm filters all Tracking Markers

:tm Marker1 filters all Tracking Markers with name containing *Marker1*

:number filters all items with property key containing *number*

:number 123 filters all items with property key containing *number* and with property value containing 123

## GENERAL LIMITATIONS

### LISTS

- A list item is limited to one para element
- List types have to be the same on the same level.
- Indenting list, while the cursor is on the first item, causes indentation for the whole list, not a level shift
- Only simple numbering is supported (nested lists start again from 1)
- Deleting the first item in lists will cause inconsistent numbering
- It is possible to create scattered lists (lists interrupted by text) but they will be unscattered in the next session
- Titles are not supported

### TABLES

#### TABLE STRUCTURE

- We do not support cell rotation
- We support only % column spacing
- The widths of columns are supported for the whole table, not individual rows
- Support for irregular tables is limited (irregular tables are turned into rectangular ones)

#### TABLE PLACEMENT

- Tables cannot have margins
- Tables inside lists cannot have an indentation
- Tables inserted as first list item will be added before the list

#### TABLE SELECTION

- Multiple cell selection and typing behavior is inconsistent (when selectin from bottom-up / from top to bottom)
- Column selection causes scrolling

#### TABLE BEHAVIOR

- Pressing enter at the beginning of the very first cell causes a new line to appear above the table
- Manually set row height is not preserved
- Tables created inside lists will inherit lists in all its cells
- Tables created inside lists split the list and add another empty item
- Pressing TAB creates in the last cell creates a new row with the same options (formatting and lists, etc.)

---

#### TABLE COPY & PASTE

- Cut and pasted tables that are being referenced will lose the reference

---

#### SCROLLING

- Horizontal scrollbar is displayed even when content decreases in width
- Horizontal is only displayed when Vertical scrollbar is at the very bottom

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#### HYPERLINKS

- Links appear to have format applied to them, but it is lost in next session

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#### SELECTION

- Selecting a format that changes caret style (italic) and navigating elsewhere does not clear the style

---

#### 3D MODELS

- Limit of 41.5 million triangles on a single mesh on import
- Max size of a scene for deployment to the newest generation of iPad is ~4.5 million triangles.



## S1000D LIMITATIONS

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### LISTS (RANDOM/SEQUENTIAL/ATTENTIONRANDOM/ATTENTIONSEQUENTIAL)

- A list item is limited to one para element
- List types has to be the same on the same level.
- Only simple numbering is supported (nested lists start again from 1)
- Titles are not supported

---

### STYLES

- Emphasis can be converted to character styles (bold, italic, ...) when parsing from S1000D. Information about emphasis is not being kept from that point forward in the deployment process.

---

### LINKS

- Internal reference to anything other than steps, figures, supplies, equipment, spares, & Tables

---

### TABLES

- Tables cannot be embedded in tables
- We do not support cell rotation
- We support only % column spacing
- Groups are not supported
- The widths of columns are supported for the whole table, not individual rows
- Tables cannot have margins
- Tables inside lists cannot have indentation
- We do not support tgstyle tag for Business Rules and standard table types (see BRDP-S1-00121)
- Vertical justification not supported
- Support for irregular tables is limited
- Warnings and Cautions are not supported

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### RICH TEXT

- Acronyms: we do not support bullet points inside of acronyms
- Acronyms: we do not support rich text (superscript, subscript) in acronym search
- Inline images are not supported