How To Part Replace
# Document History

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1 Introduction

This guide describes the Visual Work Instructions creation in SAP 3D Visual Enterprise Author based on Engineering CAD assembly with further update of changed parts from Engineering CAD assembly Revision 2.
2 Authoring Visual Work Instructions

2.1 Creating Assembly Animation Steps Using the Explode Tool


2. Open the Tool Assistant | Manual Explode tool:
3. Using rectangle selection (Ctrl + Mouse drag), select lock sub assembly.

4. Click the Start button; make sure you have 7 objects included.
5. Make sure you have settings set as below and create explode animation by dragging Y axis handle (green arrow).

6. Unselect objects (just single mouse click in Viewport), and finalize by pressing the Finish button. Navigate to Window -> Steps and Procedures Panel.
7. Reverse animations by right mouse click on top procedure and choose *Reverse*.

8. Preview animation by playing the procedure.

We have created procedure with animated assembly steps. Make sure everything is correct by playing procedure and save it as `DoorVWIRev1.rh`. 
2.2 Advanced Authoring

In order to support Change Management, authoring has to be based on the special guidelines:

- Do not change structure of original Scene Tree (BOM), operations like delete, relocate, collapse and so on. In case structure changed, Parts Replace will recreate structure from new Engineering Revision assembly and delete all authored content associated with these parts.

- Do not alter Parts geometry (Polyreduce, Mesh Edit and so on). Parts Replace will automatically restore all changed geometry from the new Engineering Revision assembly.

- All additional content (tools, visual context and so on) has to be placed in separate folder beyond top level of assembly.

Example:
3 Updating Changed Parts

3.1 Updating Parts from New Engineering Revision File

The SAP 3D Visual Enterprise Author can update authored content (Visual Work Instructions) when engineering changes occur. As an example we will use DoorAsmEngRev2.rh file where part 42122322-1801 has been updated (larger size).

DoorAsmEngRev1.rh

DoorAsmEngRev2.rh
1. Open the DoorVWRev1.rh file.

2. Open Files Panel and locate the DoorAsmEngRev2.rh file.
3. Select top level of assembly `Product_Rev1` and using right mouse button drag and drop the `DoorAsmEngRev2.rh` file into the viewport. The `Replace` context menu opens.

4. Select `Replace with Options`. The `Replace Options` window opens. Make sure you have the same settings and press the `Replace Parts` button.
5. You will see replace log and parts will be matched and replaced from new revision assembly.

As result the 42122322-1801 part got replaced with its new revision.
3.2 Advanced Parts Replace

New Engineering Revision of assembly contains new parts, these parts will be added. Names of added parts could be found in replace log. Authoring might need to be adjusted.

New Engineering Revision of assembly has some parts deleted. In this case matching parts from VWI file will also be deleted. Names of deleted parts could be found in the replace log. Authoring might need to be adjusted.