Interference Check

User Tutorial for Interference Check

May 2, 2014

ISIS
Tel (615) 343-7472 Fax (615) 343-7440
1025 16th Avenue South Nashville, TN 37212
www.isis.vanderbilt.edu

VANDERBILT
UNIVERSITY

1.0 Purpose

The interference check ensures that two parts do not have coincident volumes.

It is important for users to have the ability to turn the interference check on and off. By default, the interference check is turned off. It can take roughly 5X longer for an analysis to complete when the check is turned on. The more components in your model, the longer the test bench will take to finish.

2.0 Procedure to Turn "On"

The following steps show how to turn on the interference check:

Step 1:

Open up the CAD-based test bench you want to run. A basic CAD-assembly test bench is used in Figure 1. Other CAD-based test benches include: FEA, CFD, Blast, Ballistics, and Manufacturing.

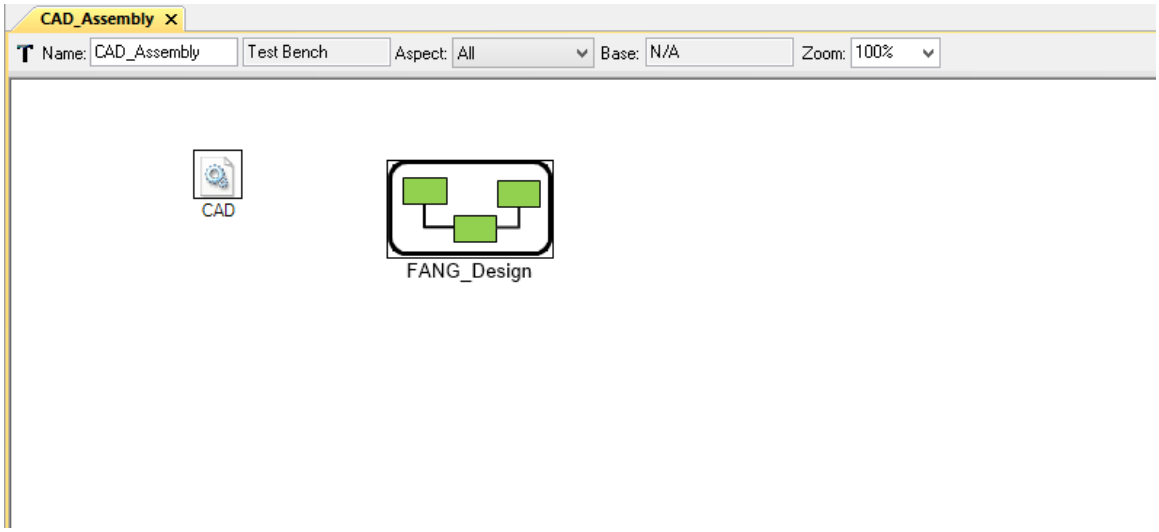

Figure 1: Open a CAD-based Test Bench

Step 2:

Add a parameter part to the test bench.

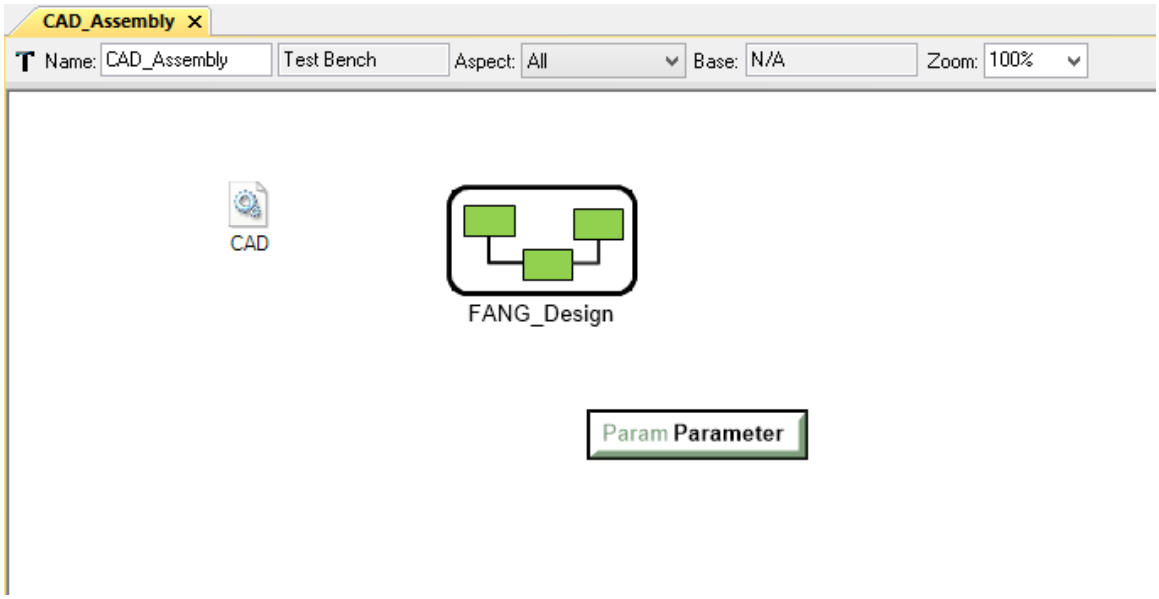

Figure 2: Add a Parameter Part

Step 3:

Name the parameter **INTERFERENCE_CHECK**. This has to be named exactly the same and all caps.

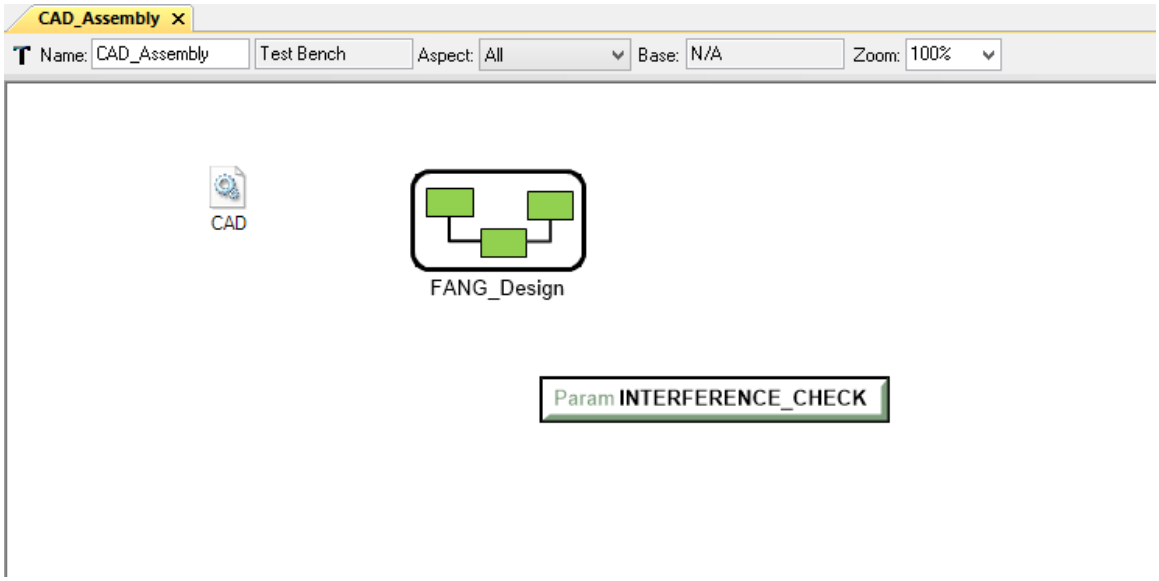

Figure 3: Change Parameter name to INTERFERENCE_CHECK

Step 4:

Change the value of the parameter to "1" to turn the interference check on.

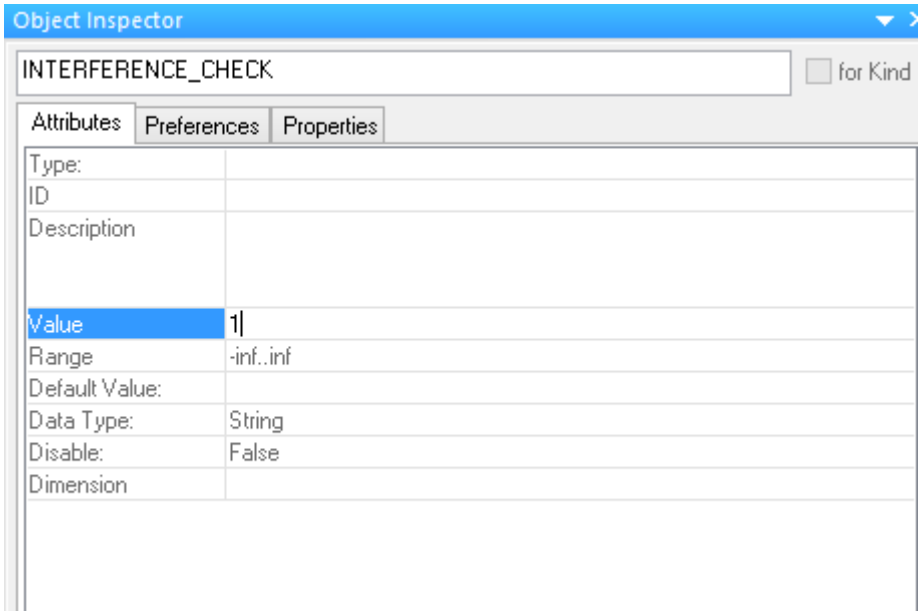

Figure 4: Change Parameter value to 1

The test bench will now simulate with the interference check.

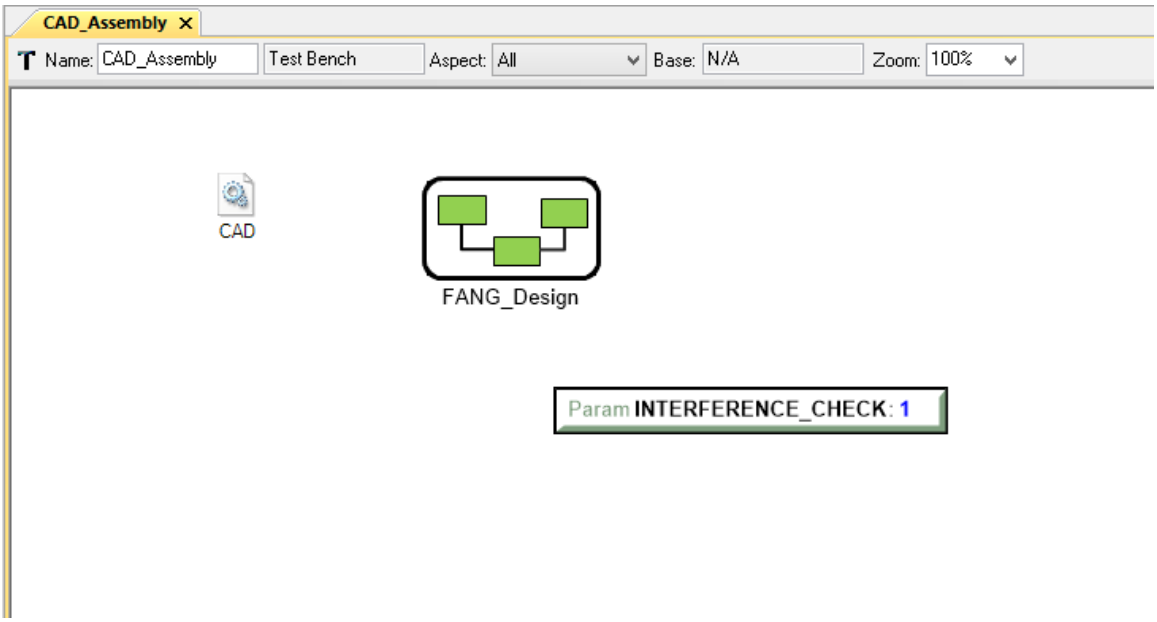

Figure 5: Interference Check Set Up

To turn the check off, switch the value back to "0" or delete the parameter.

3.0 Interpreting Results

The CADAssembly_Interference folder generated will determine if two parts coincided during the CAD Assembly.

If there are no interference's, the file will say no interference's found. Press fits and line-to-line fits are examples of acceptable interference's; otherwise, there should not be interference's.

Examples of two different interference analysis results are seen below. Notice the contents of the file when the analysis succeeds or fails. If it fails, the CreateAssembly program keeps processing the rest of its tasks.

Example #1

Part 1 Name	Part 2 Name	Interference Volume (mm^3)
E137_HULL_SOAPBAR_H3_	I206_STL_A36_6P4XP051XP038_4Z	475781
E137_HULL_SOAPBAR_H3_	I206_STL_A36_6P4XP051XP038_2Z	475781
E137_HULL_SOAPBAR_H3_	I215_AL_6061_T6_3P7X2P4XP006_3Z	5.26753e+006
E137_HULL_SOAPBAR_H3_	I212_AL_6061_T6_7P6XP051XP05_5Z	503626
E137_HULL_SOAPBAR_H3_	I212_AL_6061_T6_7P6XP051XP05_6Z	503626

Example #2

Wed Jan 29 12:55:33 2014

Part 1 Name	Part 2 Name	Interference Volume (mm^3)
2_PISTON_CALIPER	4000_SPINDLE	1723.34
4_PISTON_PAD	4000_BRAKE_ROTOR	74536.7
4_PISTON_PAD	4000_BRAKE_ROTOR	58743.1
2_PISTON_CALIPER	WHEEL_INNER_HALF	1374.65
4000_HUB	WHEEL_INNER_HALF	583.39
22X1_5_STUD	WHEEL_OUTER_HALF	2952.47
22X1_5_STUD	WHEEL_OUTER_HALF	2952.47
22X1_5_STUD	WHEEL_OUTER_HALF	2952.47
22X1_5_STUD	WHEEL_OUTER_HALF	2952.47
22X1_5_STUD	WHEEL_OUTER_HALF	2952.47
22X1_5_STUD	WHEEL_OUTER_HALF	2952.47
22X1_5_STUD	WHEEL_OUTER_HALF	2952.47
22X1_5_STUD	WHEEL_OUTER_HALF	2952.47
22X1_5_STUD	WHEEL_OUTER_HALF	2952.47
22X1_5_STUD	WHEEL_OUTER_HALF	2952.47
Error occurred when computing interferences. This file is incomplete.		