Altair

HyperWorks

Altair HVVH Tutorials 2019

HVVH-9000: Manufacturing Solution Tab - HyperXtrude

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In this tutorial you will learn how to:

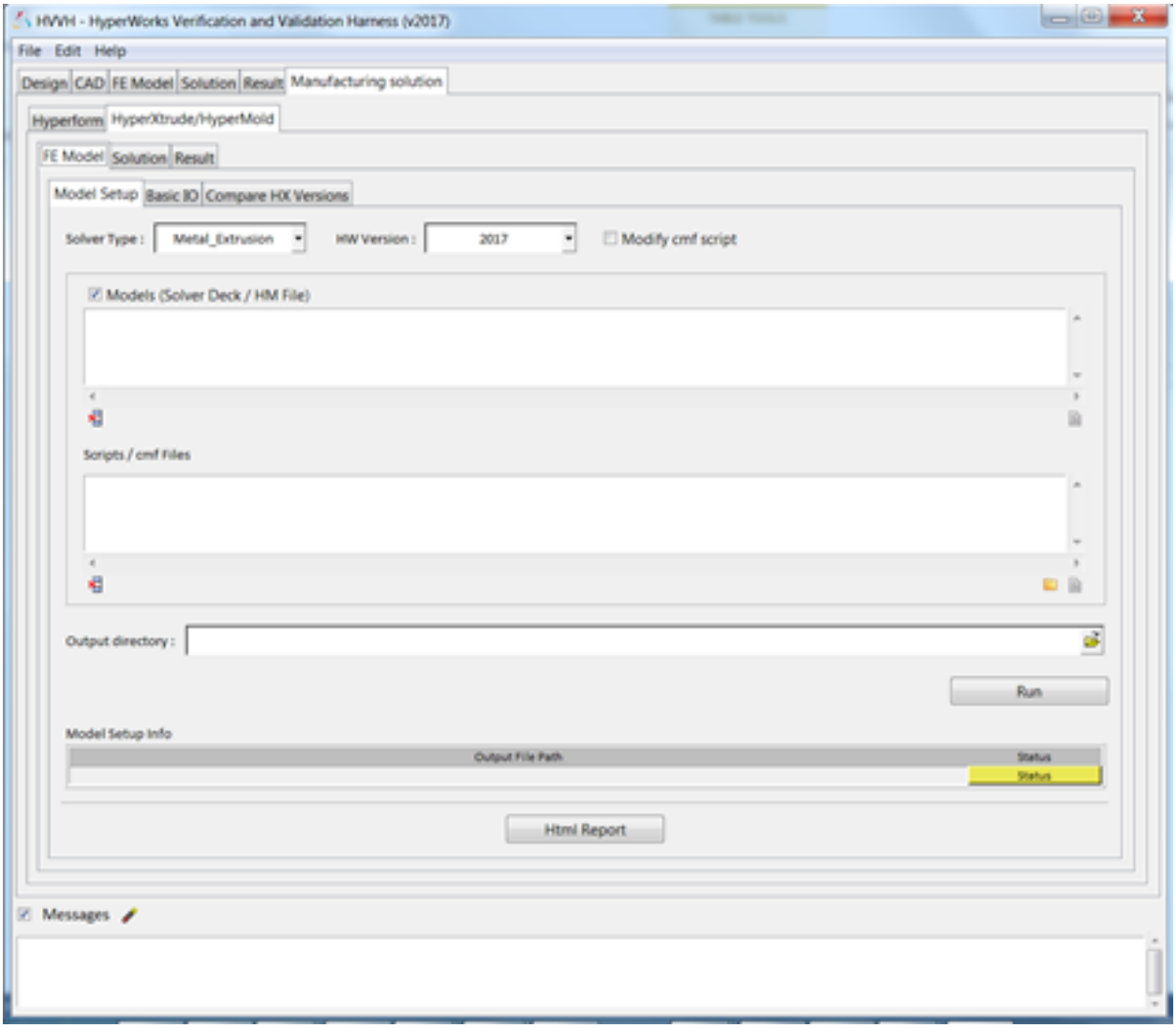
- Setup a model in Altair HyperXtrude and identify any problems during the Altair HyperXtrude interactive operation.

Step 1: FE-Model Setup

1. From **Manufacturing Solution** tab, select the ***HyperXtrude/HyperModel > FE Model*** tab ***> Model Setup*** tab.

   See the Altair HyperXtrude/HyperModel FE Model > Model Setup for more information.

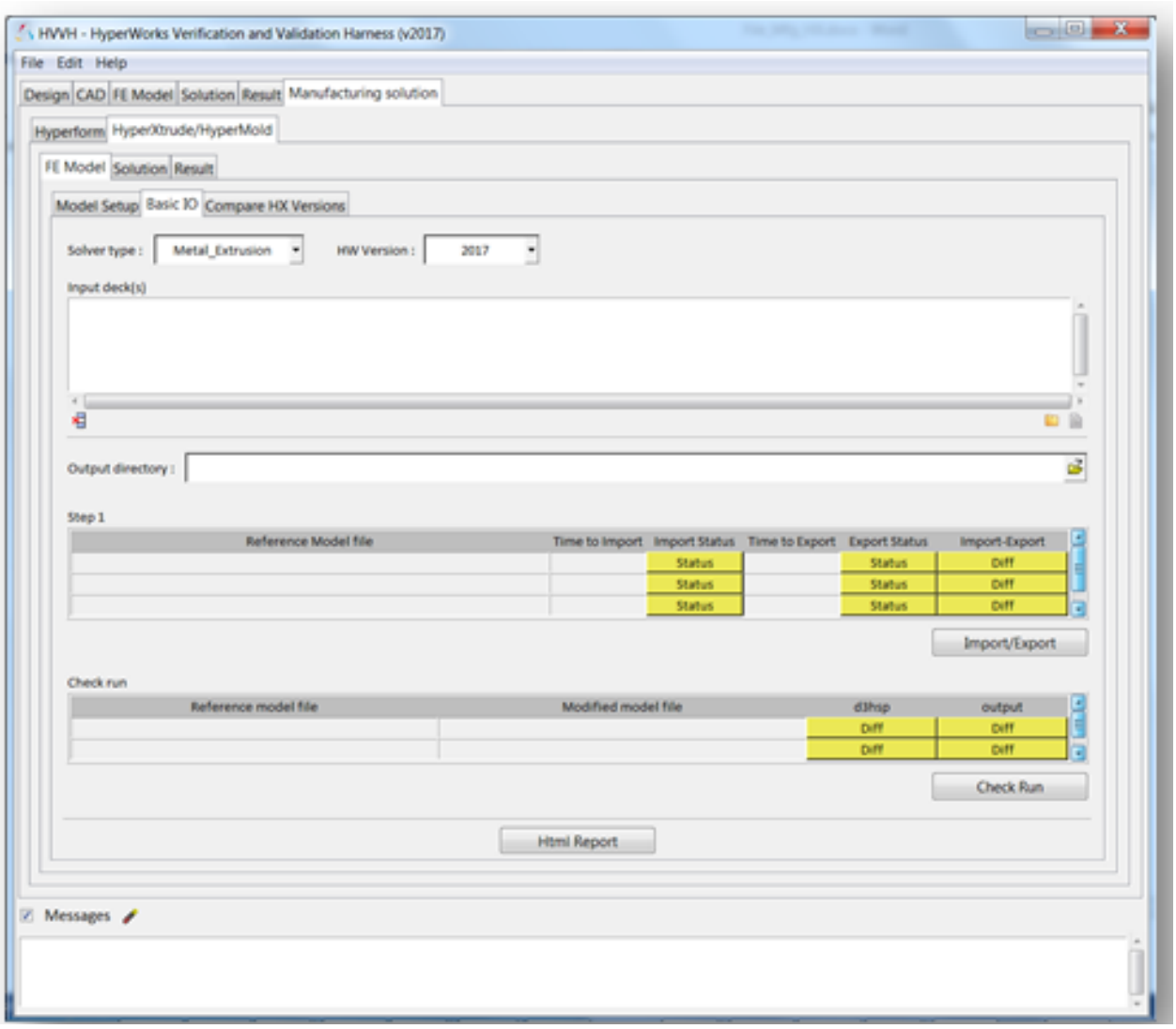
   There is only a **Modify cmf script** option on this tab, not a Config file option.



Step 2: Basic import and export.

Identify any loss of data during import and export Altair HyperXtrude operations.

1. From the **Manufacturing Solution** tab, select the ***HyperXtrude/HyperModel > FE Model*** tab ***> Basic IO*** tab.



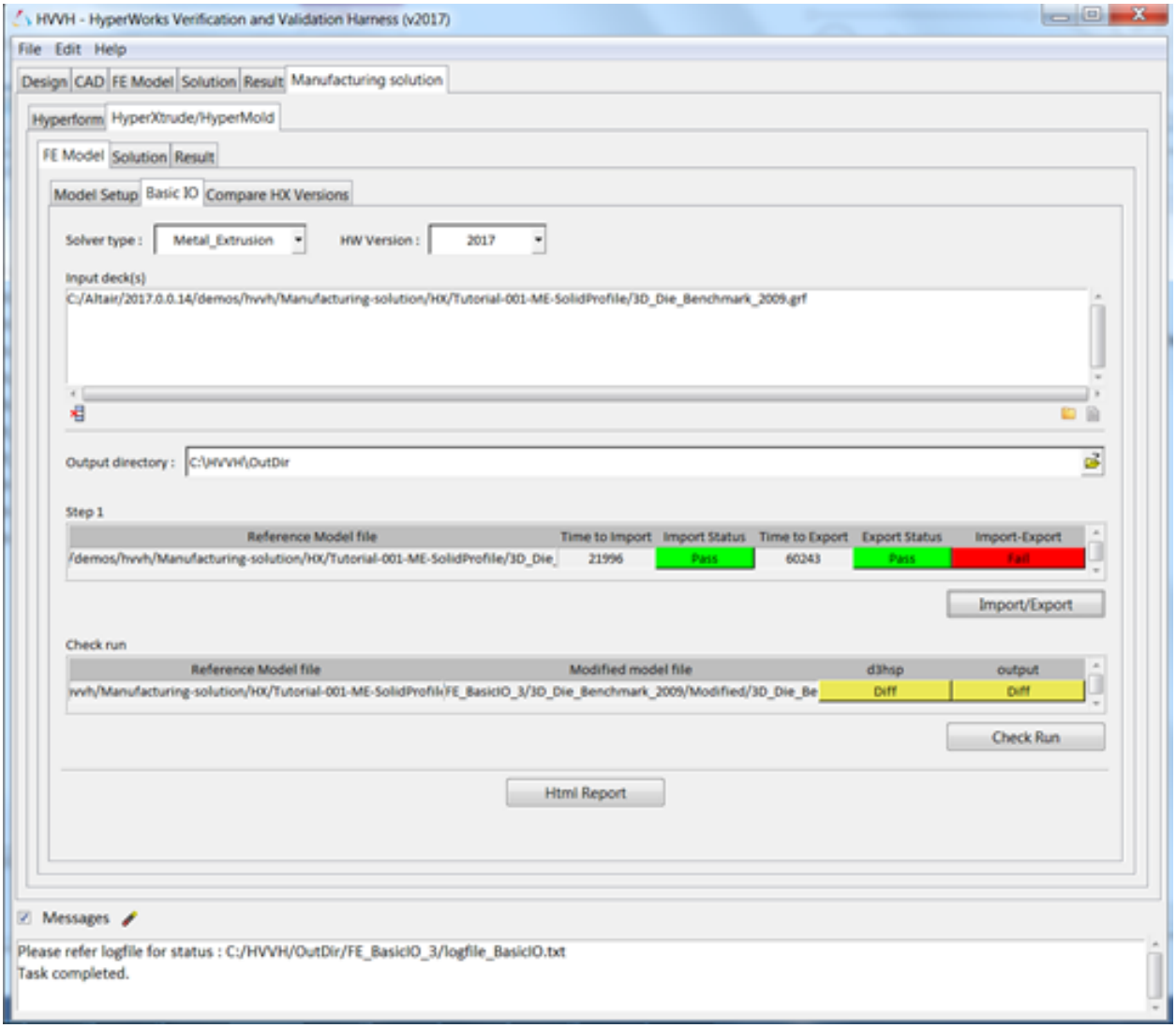
2. For **Solver Type**, select ***Metal_Extrusion***.
3. For **HW Version**, select ***2017***.
4. Under ***Input decks***, use the file browser icon, , or the add file icon, , to select and open the `3D_Die_Benchmark_2009.grf` file, located in `..\tutorials\hvvh\Manufacturing-solution\HX\Tutorial-001-ME-SolidProfile`.
5. For the ***Output directory*** field, use the open file icon, , to select an output directory.
6. Click ***Import/Export***.

Step 1 shows the import and export details and status (pass or fail) of the reference model file (selected above).

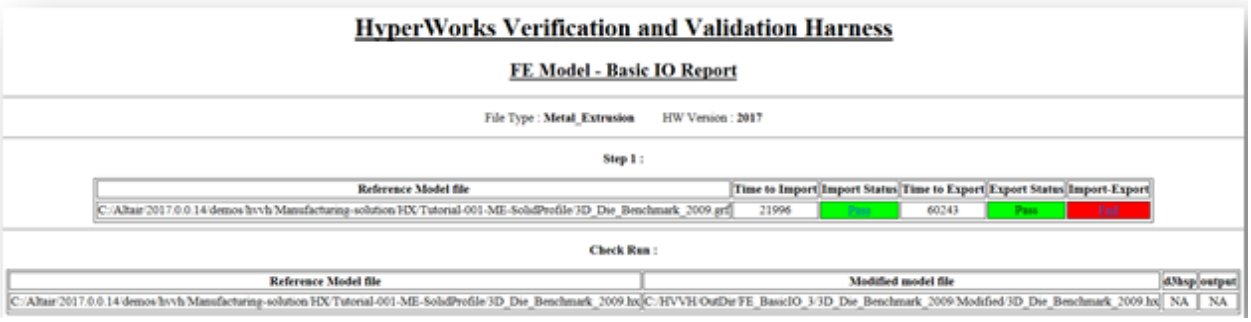
The last column displays information on the ASCII differences between the imported file and the Altair HyperMesh exported file. If there are no differences, it is shown as ***Pass***, otherwise it is displayed as ***Fail***.

The original model and the Altair HyperXtrude exported models are run with the Altair Radioss solver and the OUT file blocks are compared as shown in the status.

7. In the **Messages** window, the run details are displayed along with the log file location.



8. Click ***HTML Report*** to open an HTML report.



HyperWorks Verification and Validation Harness

FE Model - Basic IO Report

File Type : **Metal_Extrusion** HW Version : **2017**

Step 1 :

Reference Model file	Time to Import	Import Status	Time to Export	Export Status	Import-Export
C:/Altair/2017.0.0.14/demos/hvvh/Manufacturing-solution/HX/Tutorial-001-ME-SolidProfile/3D_Die_Benchmark_2009.grs	21996	Pass	60243	Pass	Fail

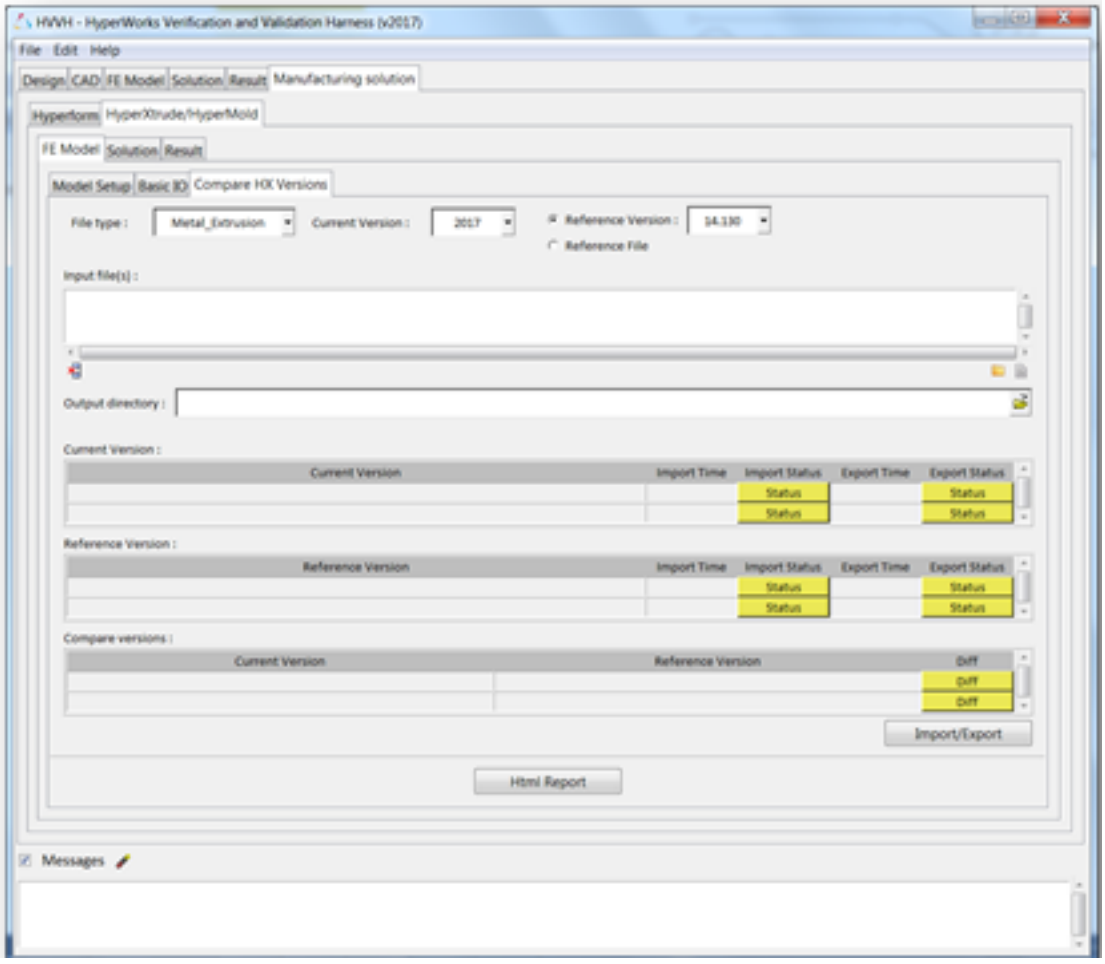
Check Run :

Reference Model file	Modified model file	d3hsp	output
C:/Altair/2017.0.0.14/demos/hvvh/Manufacturing-solution/HX/Tutorial-001-ME-SolidProfile/3D_Die_Benchmark_2009.hx	C:/HVVH/OutDir/FE_BasicIO_3/3D_Die_Benchmark_2009/Modified/3D_Die_Benchmark_2009.hx	NA	NA

Step 3: Compare Altair HyperXtrude Versions.

Compare the analysis decks exported in different versions of Altair HyperXtrude.

1. From the Manufacturing Solution tab, select the ***HyperXtrude/HyperModel > FE Model*** tab ***> Compare HX Versions*** tab.



2. For **File Type**, select ***Metal_Extrusion***.
3. For **Current Version**, select ***2017***.
4. For **Reference Version**, select ***14.0.0.130***.

5. Under ***Input decks***, use the file browser icon,  , or the add file icon,  , to select and open the `3D_Die_Benchmark_2009.grf` file, located in `..\tutorials\hvvh\Manufacturing-solution\HX\Tutorial-001-ME-SolidProfile`.

6. For the ***Output directory*** field, use the open file icon,  , to select an output directory.

7. Click ***Import/Export***.

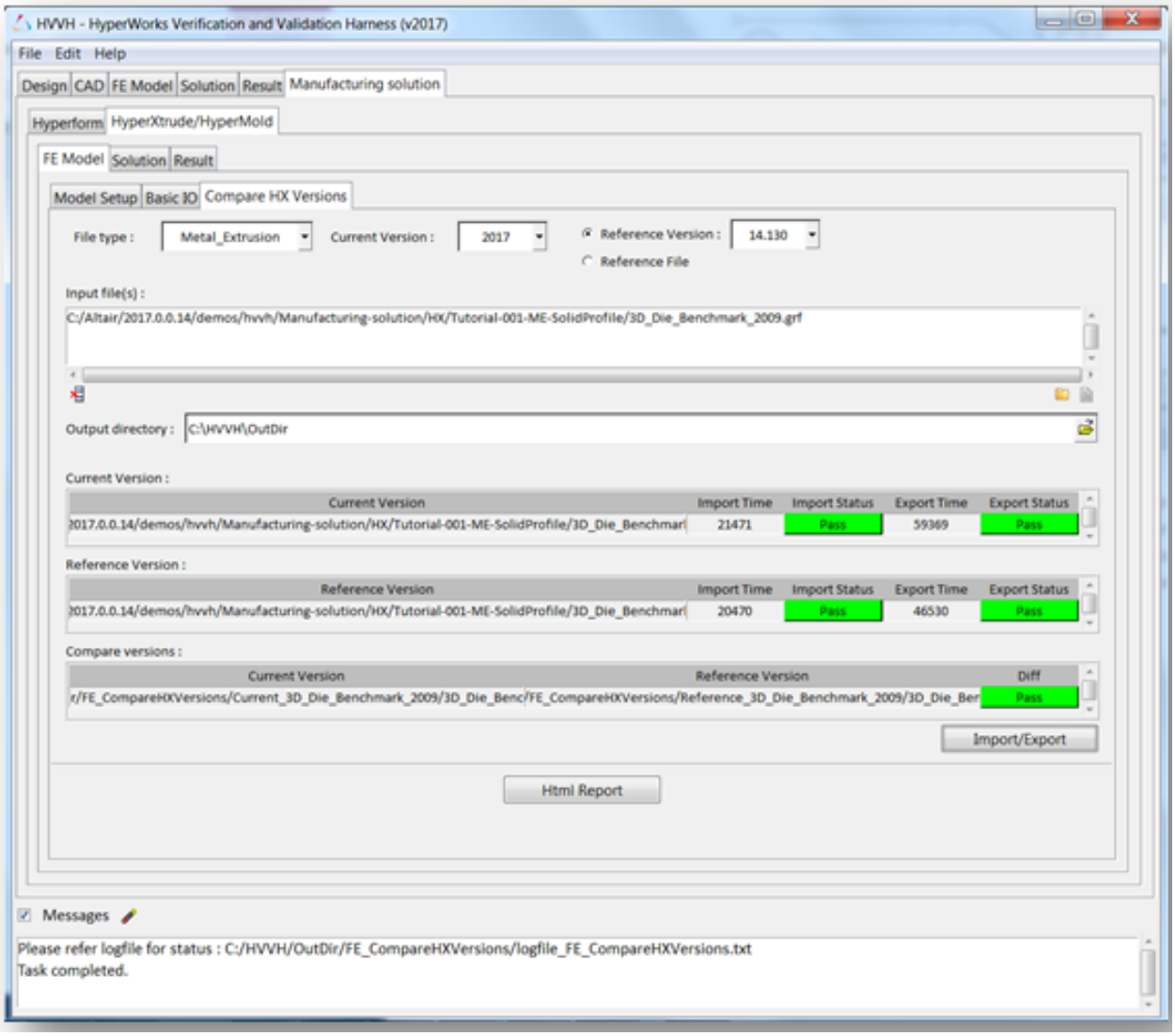
   The first table shows the import and export details and status (pass or fail) of the model file (selected above) in the current version.

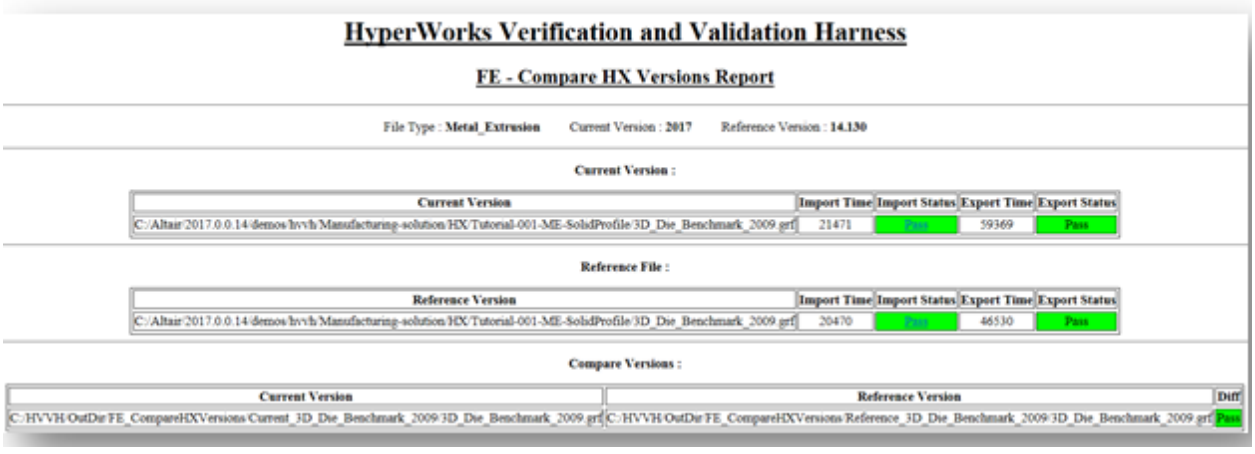
   The second table details the import and export time and status (pass or fail) of the model file (selected above) in the reference version.

   The last column displays information on the ASCII differences between the exported files in the current and reference versions of Altair HyperMesh. If there is no difference, it is shown as ***Pass***, otherwise it is displayed as ***Fail***.

8. In the **Messages** window, the run details are displayed along with the log file location.

9. Click ***HTML Report*** to open an HTML report.


HVVH - HyperWorks Verification and Validation Harness (v2017)
File Edit Help
Design CAD FE Model Solution Result Manufacturing solution
Hyperform HyperXtrude/HyperMold
FE Model Solution Result
Model Setup Basic IO Compare HX Versions
File type : Metal_Extrusion
Current Version : 2017
Reference Version : 14.130
Reference File
Input file(s) :
C:/Altair/2017.0.0.14/demos/hvvh/Manufacturing-solution/HX/Tutorial-001-ME-SolidProfile/3D_Die_Benchmark_2009.grf
Output directory : C:\HVVH\OutDir
Current Version :
Current Version | Import Time | Import Status | Export Time | Export Status
2017.0.0.14/demos/hvvh/Manufacturing-solution/HX/Tutorial-001-ME-SolidProfile/3D_Die_Benchmar 21471 Pass 59369 Pass
Reference Version :
Reference Version | Import Time | Import Status | Export Time | Export Status
2017.0.0.14/demos/hvvh/Manufacturing-solution/HX/Tutorial-001-ME-SolidProfile/3D_Die_Benchmar 20470 Pass 46530 Pass
Compare versions :
Current Version | Reference Version | Diff
r/FE_CompareHXVersions/Current_3D_Die_Benchmark_2009/3D_Die_Benc/FE_CompareHXVersions/Reference_3D_Die_Benchmark_2009/3D_Die_Ber Pass
Import/Export
Html Report
Messages
Please refer logfile for status : C:/HVVH/OutDir/FE_CompareHXVersions/logfile_FE_CompareHXVersions.txt
Task completed.


HyperWorks Verification and Validation Harness
FE - Compare HX Versions Report
File Type : Metal_Extrusion Current Version : 2017 Reference Version : 14.130
Current Version :
Current Version | Import Time | Import Status | Export Time | Export Status
C:/Altair/2017.0.0.14/demos/hvvh/Manufacturing-solution/HX/Tutorial-001-ME-SolidProfile/3D_Die_Benchmark_2009.grf 21471 Pass 59369 Pass
Reference File :
Reference Version | Import Time | Import Status | Export Time | Export Status
C:/Altair/2017.0.0.14/demos/hvvh/Manufacturing-solution/HX/Tutorial-001-ME-SolidProfile/3D_Die_Benchmark_2009.grf 20470 Pass 46530 Pass
Compare Versions :
Current Version | Reference Version | Diff
C:/HVVH/OutDir/FE_CompareHXVersions/Current_3D_Die_Benchmark_2009/3D_Die_Benchmark_2009.grf C:/HVVH/OutDir/FE_CompareHXVersions/Reference_3D_Die_Benchmark_2009/3D_Die_Benchmark_2009.grf Pass

Step 4: Solver check run for Altair HyperXtrude.

In this step, you will learn how to perform a check run on a solver deck (Altair HyperXtrude and tool deflection), and OUT files comparison of a solver written result file after the check run.

Three options are available for the solver check run:

- Two OUT files generated from the solver run can be compared.
- The current solver run OUT file can be compared with the reference OUT file.
- Two OUT files generated from the same solver deck using two different solver versions can be compared.

1. From the **Manufacturing Solution** tab, select the ***HyperXtrude/HyperModel > Solution*** tab ***> Check run*** tab.
2. See the **Check Run** section of the **Solution Tab** topic for more information on the tab's options.

Step 5: Compare results from different solver versions (Altair HyperXtrude and tool_deflection).

In this step, you will perform solver version result comparison for any given model's solver results. If the result files are not available, the solver run can be performed in the background, and the results generated are used in the result comparison.

1. From the **Manufacturing Solution** tab, select the ***HyperXtrude/HyperModel > Solution*** tab ***> Solver version result comparison*** tab.
2. See the **Solver version result comparison** section of the **Solution Tab** topic for more information on the tab's options.

Step 6: Compare results from an Altair HyperXtrude solver across different Altair HyperView versions.

1. From the **Manufacturing Solution** tab, select the ***HyperXtrude/HyperModel > Result*** tab ***> Solver result comparison HV versions*** tab.
2. See the **Solver result comparison HV versions** section of the **Result Tab** topic for more information on the tab's options.