

Teamcenter Simulation Integration with ANSYS Workbench

Stephen Boot

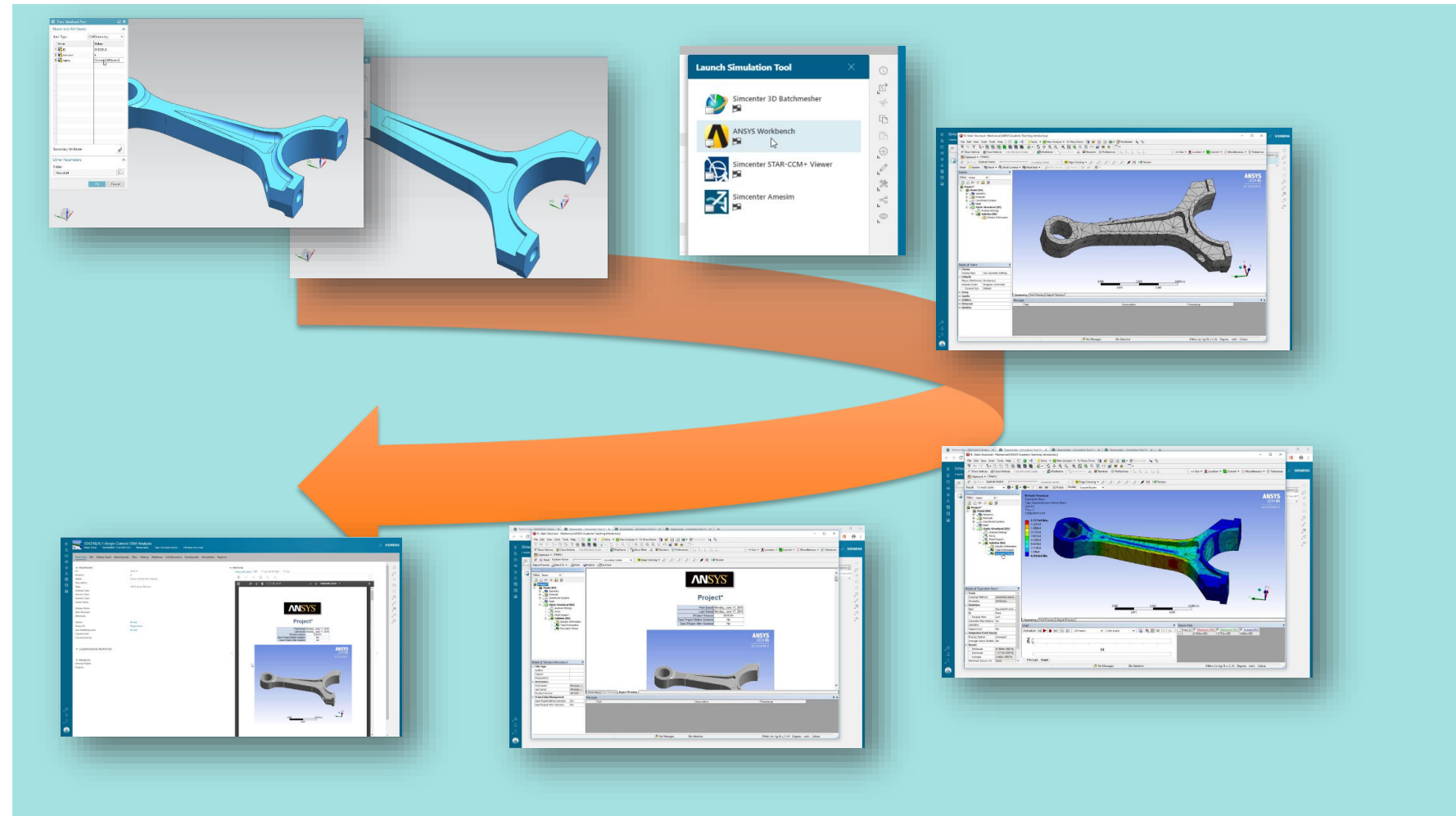
Prepare Geometry

Create CAE Model Meshing
in Ansys

Save Data in Ansys &
Capture in Teamcenter

Define & Execute
Analysis Solution

Capture Analysis Data and
Results in Teamcenter



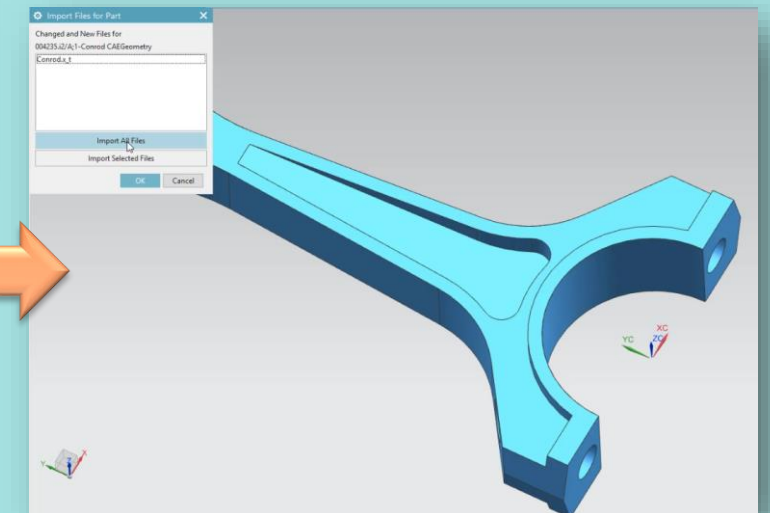
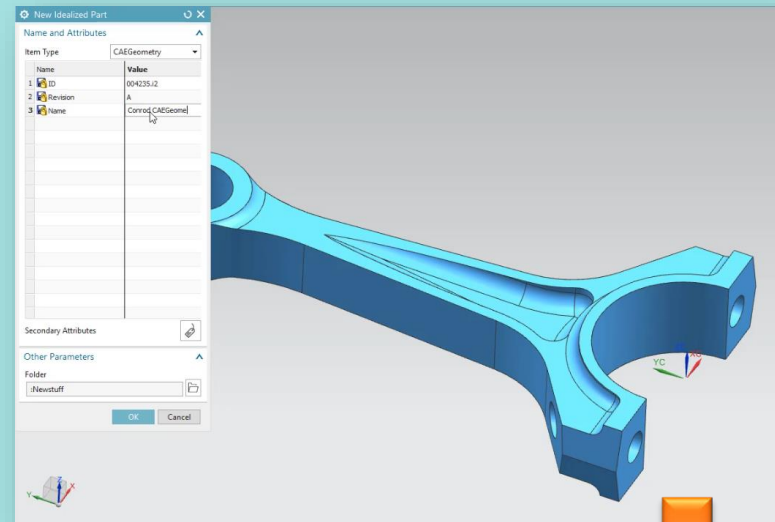
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INBOX
0 / 4 / 0
New Total Past Due

FOLDERS

SAVED SEARCHES

SUBSCRIPTION

SCHEDULE TASKS

SCHEDULES

CHANGES

REPORT PROBLEM

MY STUFF

FAVORITES

CREATE DOCUMENT

CREATE SIMULATION IT...

CAE PACKAGES

SIMULATION DASHBO...

TOOL PROGRESS MONI...

QUESTIONS

NEW WORK PACKAGE

DECLARATION QUEUE

HELP

PRINTOUTS

REPORTS

CREATE SPECIFICATION

IMPORT SPECIFICATION

NEW PART

CLASSIFICATION

AERO DIGITAL THREAD

MAIL LANDING GEAR L...

MOTION STUDY-MAIN ...

MAIN LANDING GEAR ...

L_POST RIGID.SIM1

LOWER CONTROL ARM

94-1075_RECHTS_12

GKN SWEDEN

A1 ANALYSIS

ANSYS WORKFLOW

AUTO DIGITAL THREAD

SIMROD EV

_FRONTSUSP_STEERIN...

FRONT SUSPENSION D...

_FRONTSUSP_STEERIN...

94-1075_RECHTS_SIM1



Prepare Geometry

- Items created in Teamcenter with Simcenter 3D integration
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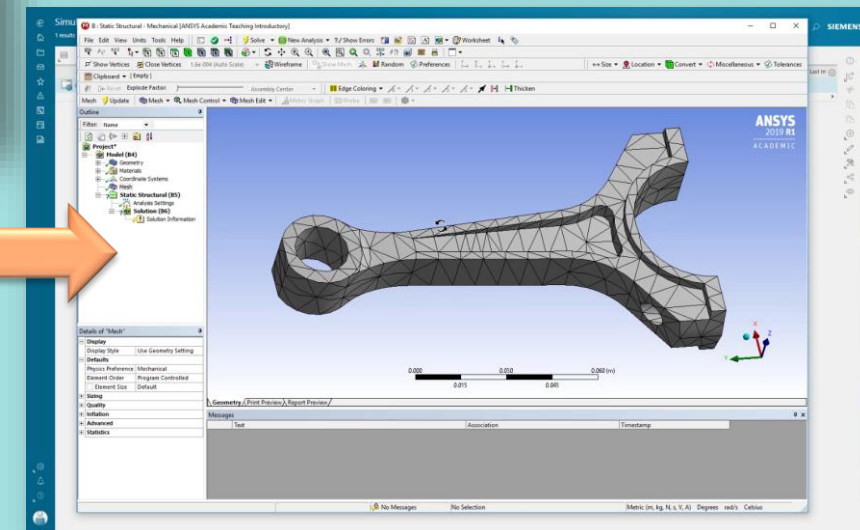
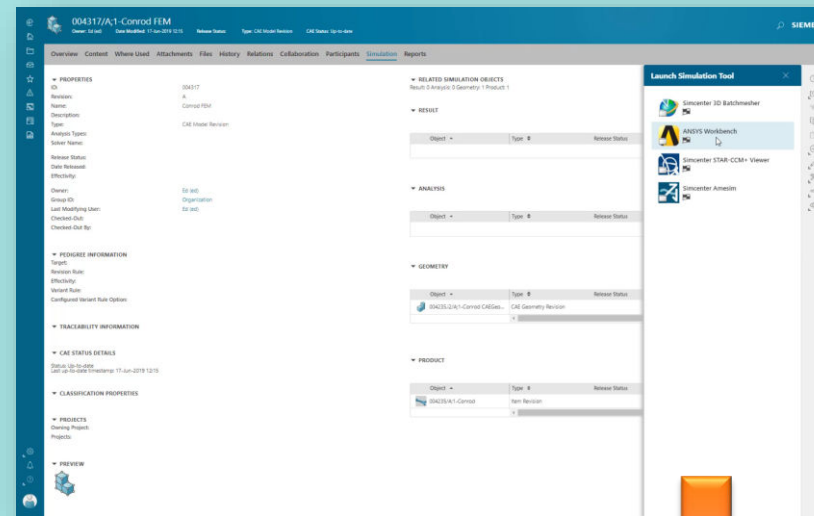
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[Overview](#) [Where Used](#) [Attachments](#) [Files](#) [History](#) [Relations](#) [Collaboration](#) [Participants](#) [Simulation](#) [Reports](#)

▼ FILE CONTENTS



Original File Name	File Size	Date Modified	Name	Owner	Checked-Out
Conrod.x_t	73 Kb	17-Jun-2019 04:13	004235.i2-A	Ed (ed)	
qafmetadata.qaf	258 bytes	17-Jun-2019 04:13	004235.i2-A	Ed (ed)	
004235_i2_A.prt	323 Kb	17-Jun-2019 04:13	004235.i2-A	Ed (ed)	



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- **Directly launch Ansys from Teamcenter**
- **Geometry in Ansys is already loaded**

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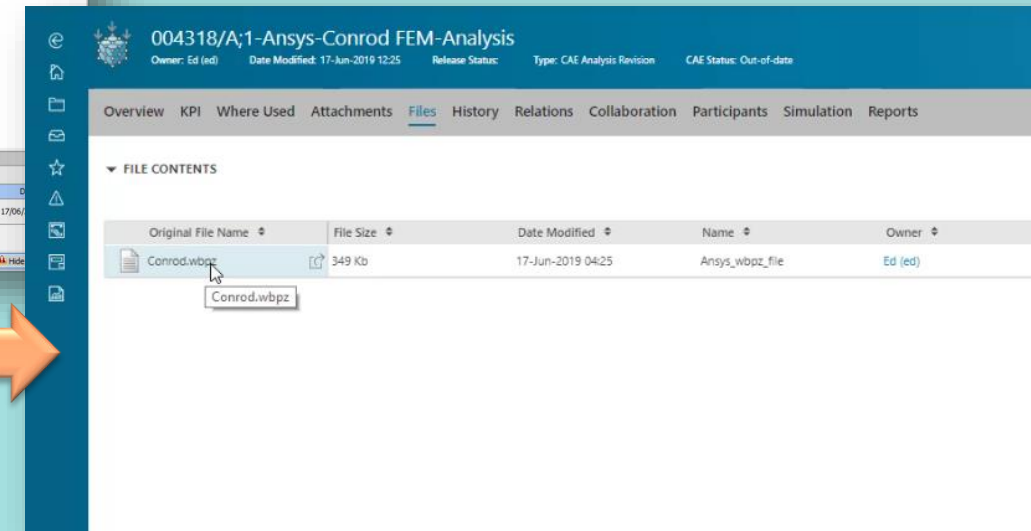
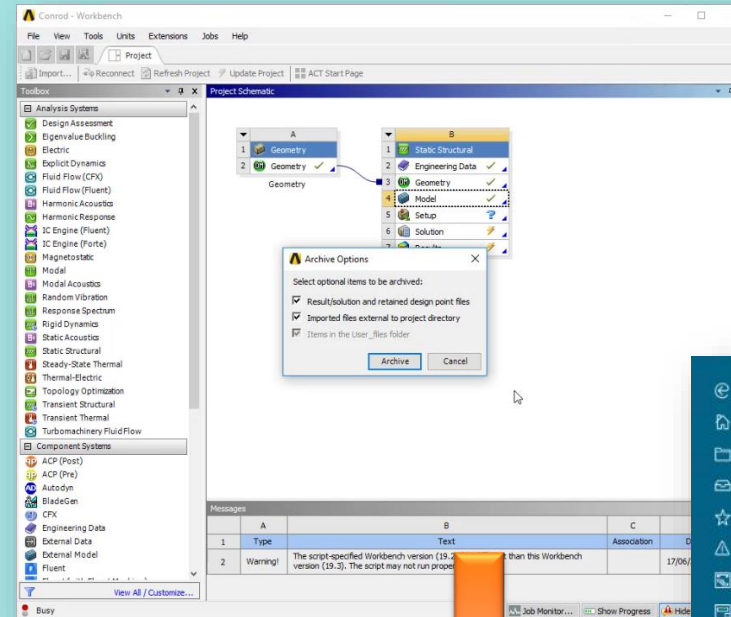
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1 results

File Edit View Units Tools Help

Solve

New Analysis

Show Errors

Worksheet

Show Vertices

Close Vertices

1.6e-004 (Auto Scale)

Wireframe

Show Mesh

Random

Preferences

Size

Location

Convert

Miscellaneous

Tolerances

Clipboard

[Empty]

Reset

Explode Factor

Assembly Center

Edge Coloring

Thicken

Mesh Update

Mesh

Mesh Control

Mesh Edit

Metric Graph

Probe

MIN

MAX

Outline

Filter: Name

Project*

Model (B4)

Geometry

Materials

Coordinate Systems

Mesh

Static Structural (B5)

Analysis Settings

Solution (B6)

Solution Information

Details of "Mesh"

Display

Display Style

Use Geometry Setting

Defaults

Physics Preference

Mechanical

Element Order

Program Controlled

Element Size

Default

Sizing

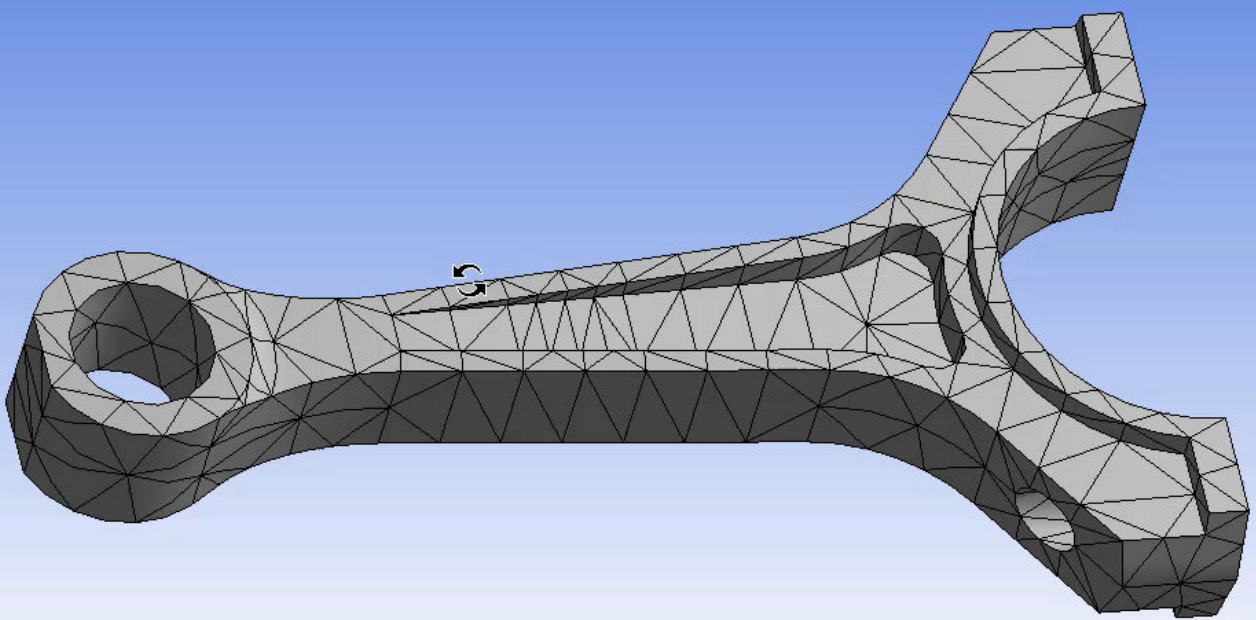
Quality

Inflation

Advanced

Statistics

ANSYS 2019 R1 ACADEMIC



0.000

0.030

0.060 (m)

0.015

0.045

Geometry

Print Preview

Report Preview

Messages

Text	Association	Timestamp
------	-------------	-----------

No Messages

No Selection

Metric (m, kg, N, s, V, A) Degrees rad/s Celsius

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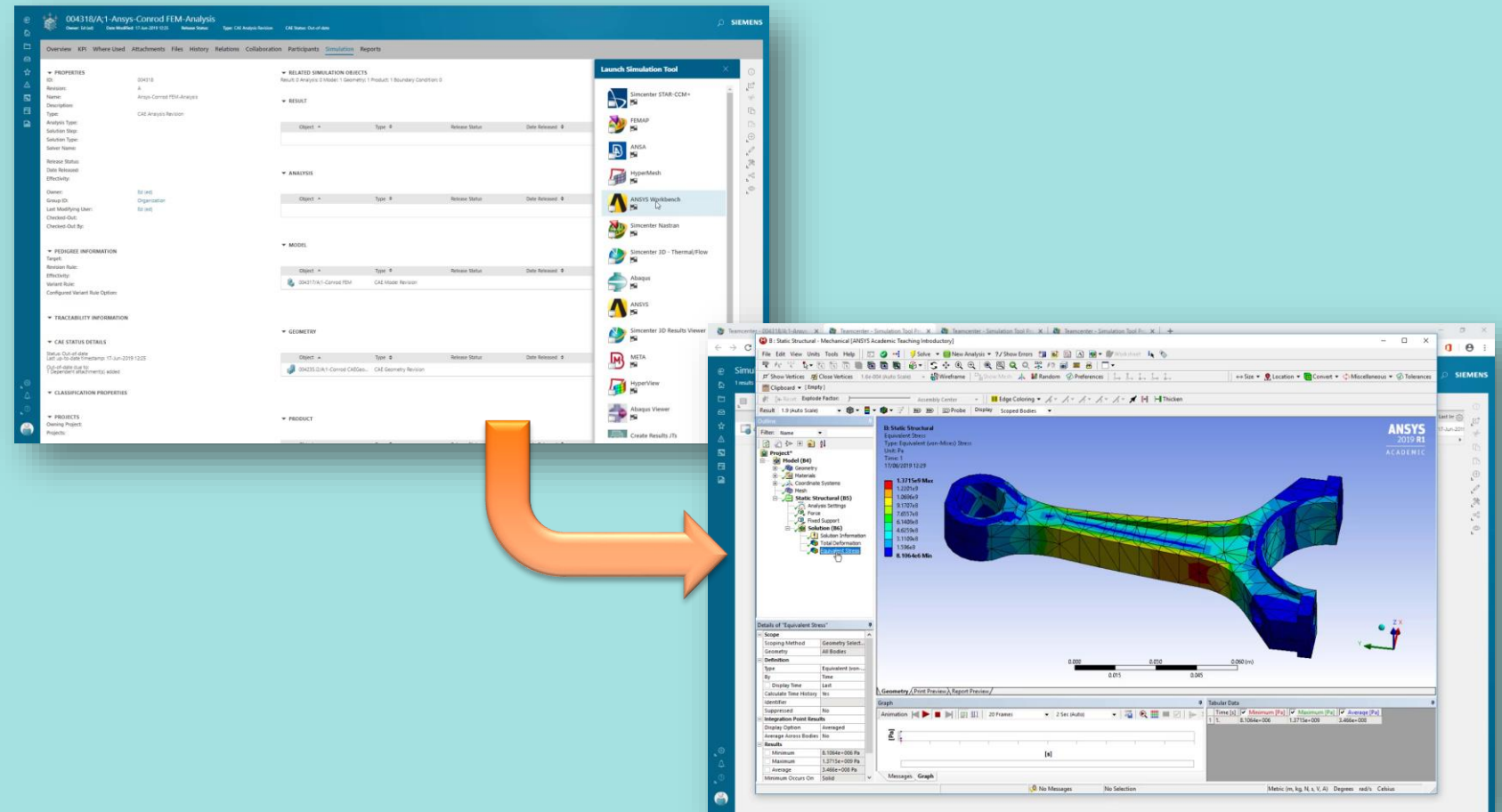
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Overview KPI Where Used Attachments Files History Relations Collaboration Participants Simulation Reports

FILE CONTENTS

Original File Name	File Size	Date Modified	Name	Owner	Checked-Out
Conrod.wbpz	349 Kb	17-Jun-2019 04:25	Ansys_wbpz_file	Ed (ed)	

Conrod.wbpz

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- **Model prepared and solved in Ansys workbench**

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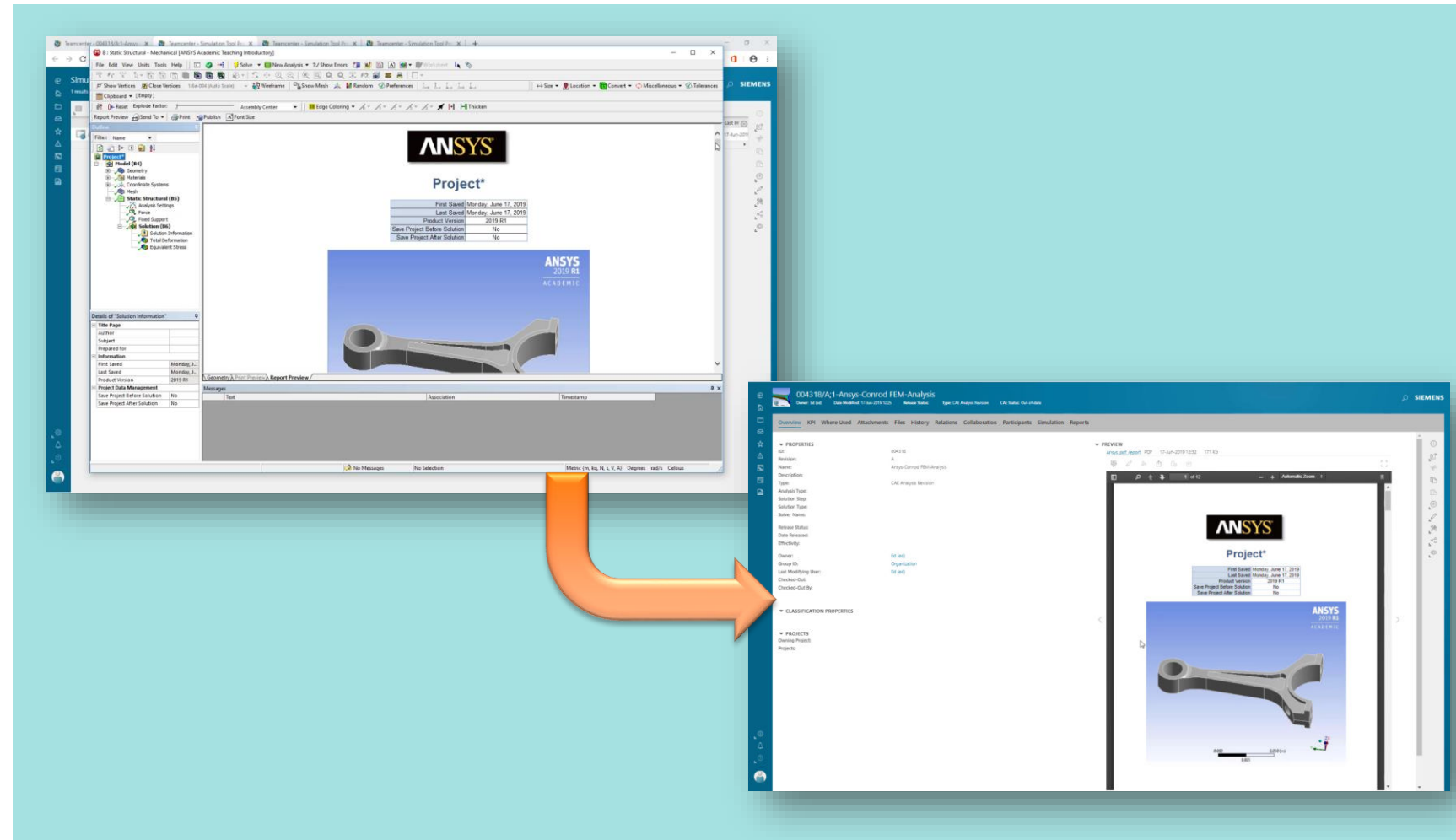
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Details of "Equivalent Stress"

Scope	
Scoping Method	Geometry Select...
Geometry	All Bodies
Definition	
Type	Equivalent (von-...
By	Time
☐ Display Time	Last
☐ Calculate Time History	Yes
Identifier	
Suppressed	No
Integration Point Results	
Display Option	Averaged
Average Across Bodies	No
Results	
☐ Minimum	8.1064e+006 Pa
☐ Maximum	1.3715e+009 Pa
☐ Average	3.466e+008 Pa
Minimum Occurs On	Solid

B: Static Structural

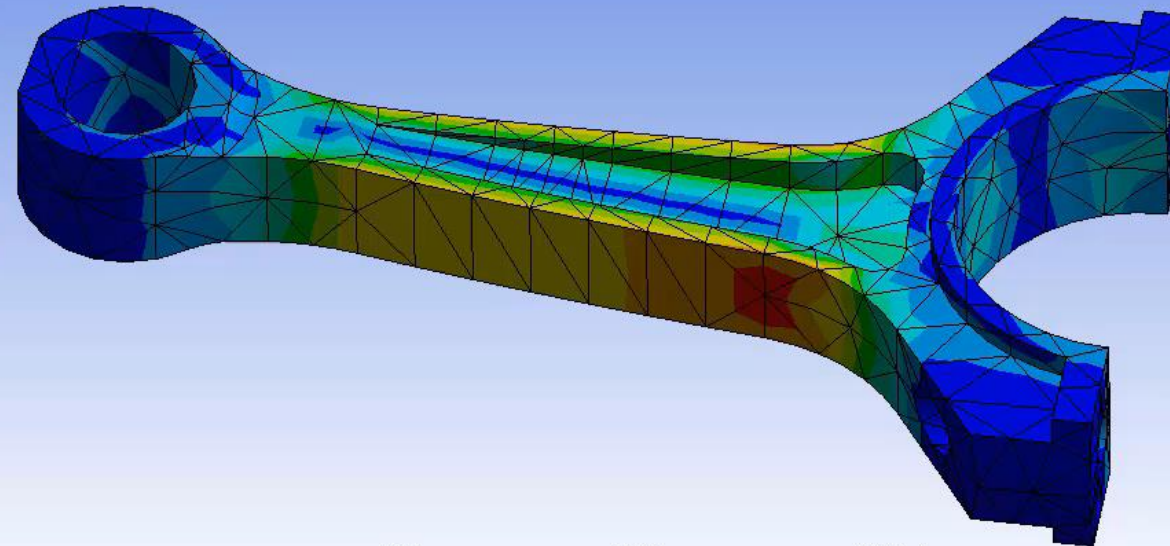
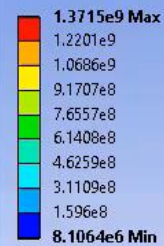
Equivalent Stress

Type: Equivalent (von-Mises) Stress

Unit: Pa

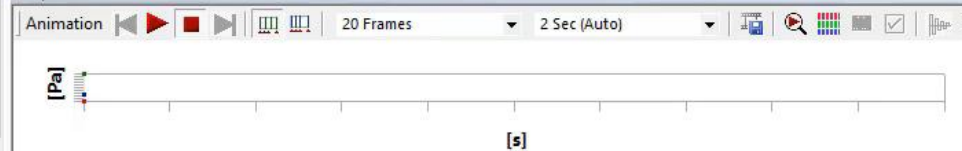
Time: 1

17/06/2019 12:29



Geometry Print Preview Report Preview

Graph



Messages Graph

Tabular Data

Time [s]	Minimum [Pa]	Maximum [Pa]	Average [Pa]
1.	8.1064e+006	1.3715e+009	3.466e+008

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Integration of Process, Workflow and Data



- All relevant data captured and managed in Teamcenter
- No requirement for file-naming conventions, directories and sub-directories
- Application opens with relevant data loaded
- Centralized sources for data promotes:
 - Teamwork
 - Data reuse
 - Knowledge capture
 - Data sharing
 - Process standardization
 - Traceability

More time for more analyses = Better product & reduced time-to-market!

Thank you.