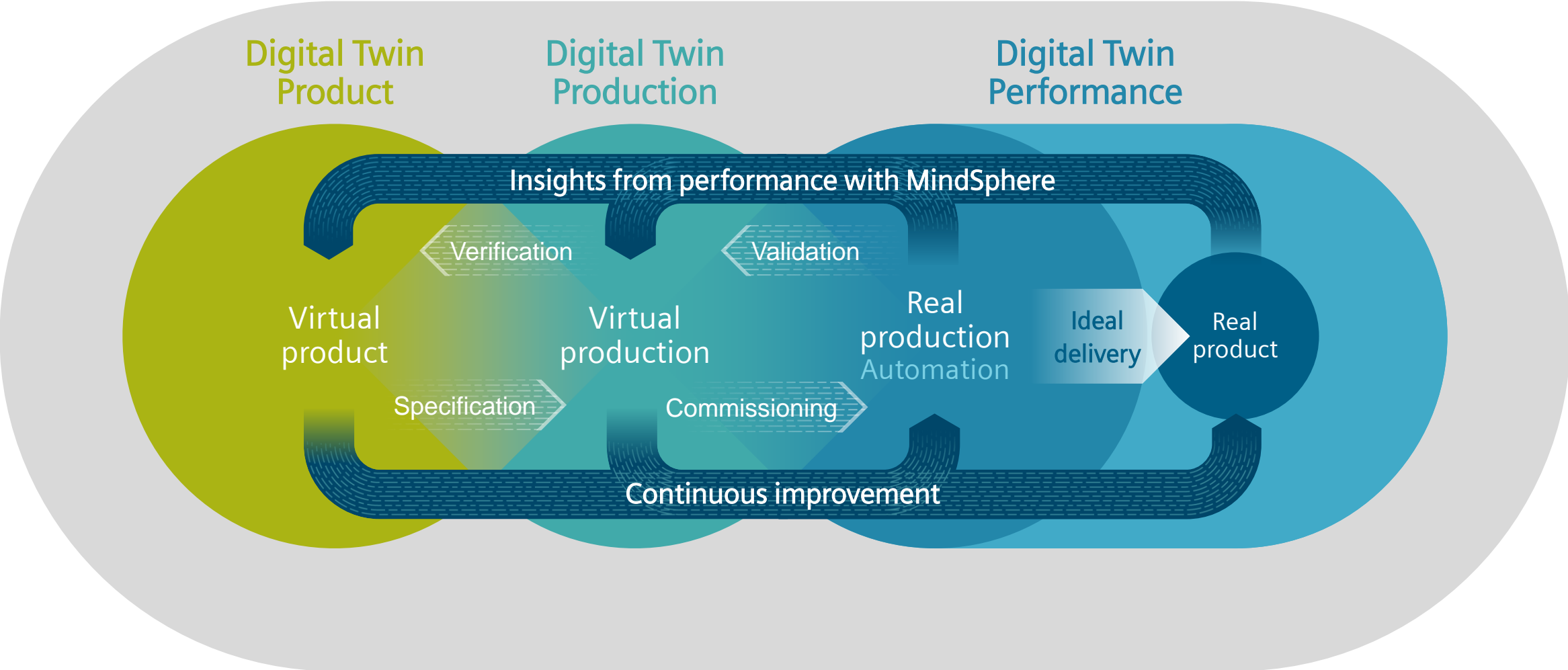




Digital Twin of the Product

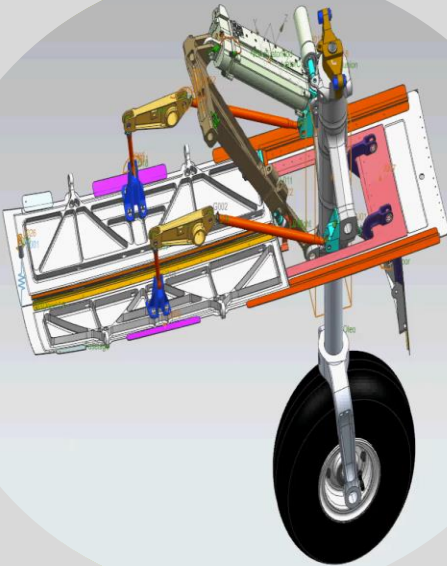
Boaz Budnick – Country Sales Manager

Comprehensive Digital Twin



Comprehensive Digital Twin

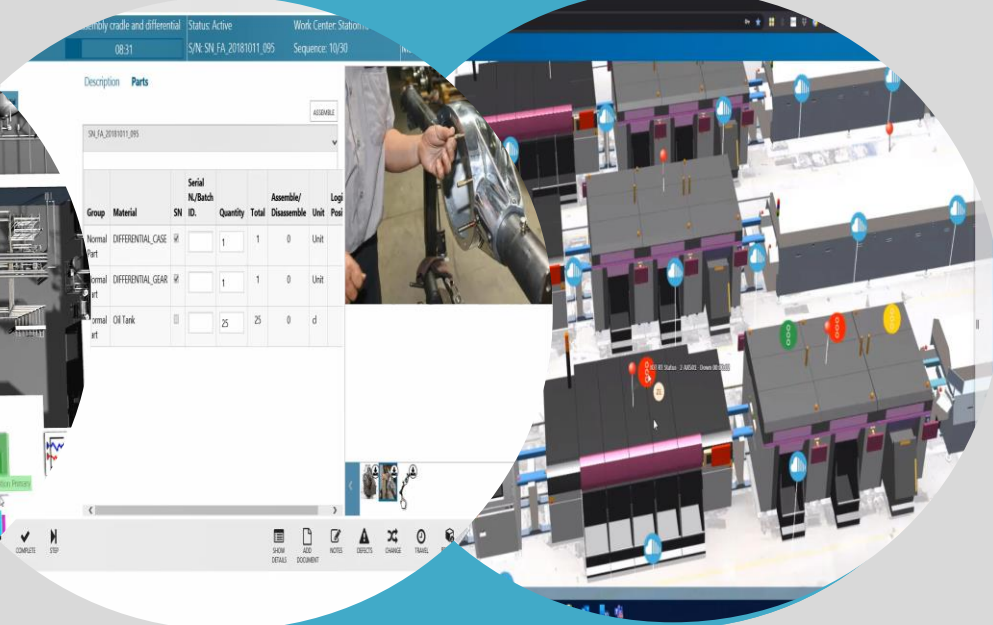
Digital Twin Product



Digital Twin Production



Digital Twin Performance

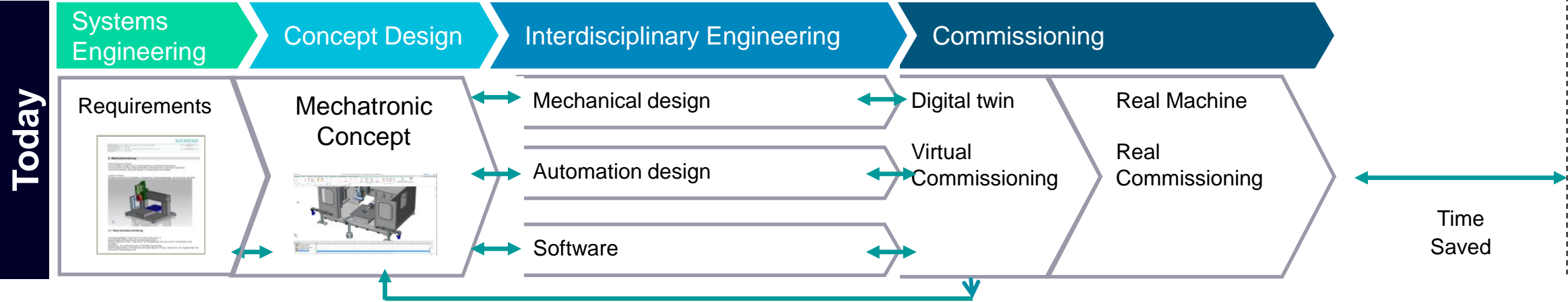
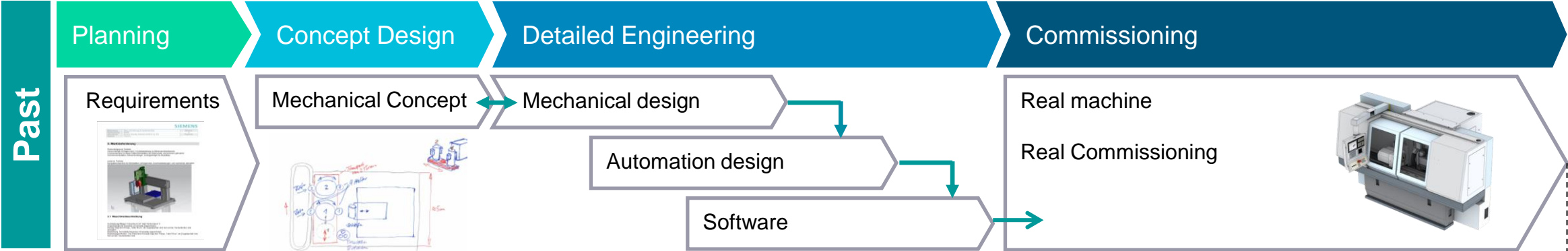


Digital Twin of the Product



Mechatronics

Reduce time and cost for machine delivery with closed loop

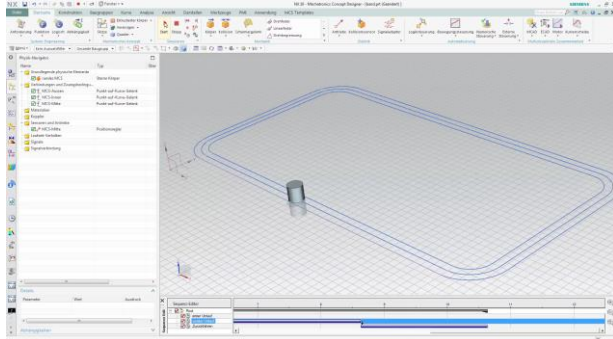


Time savings of up to 33%

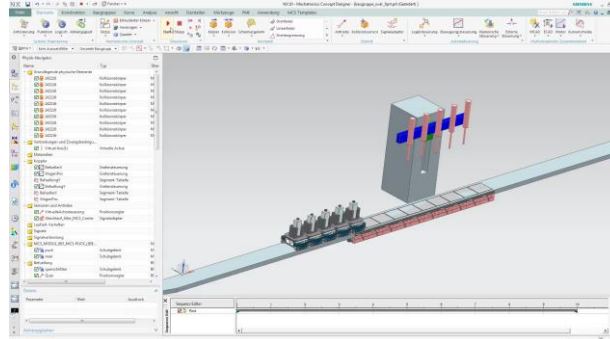
Granularity in Concept Design

Continuous detailing of concepts and simulation models

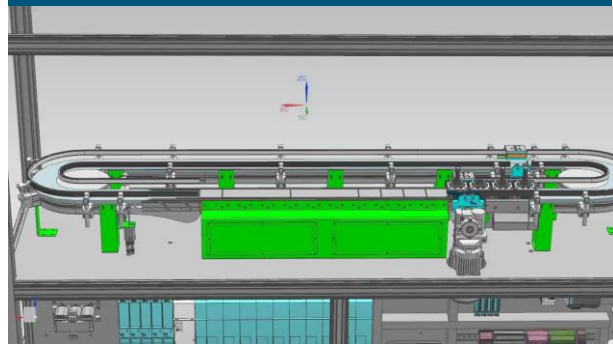
Simple Process



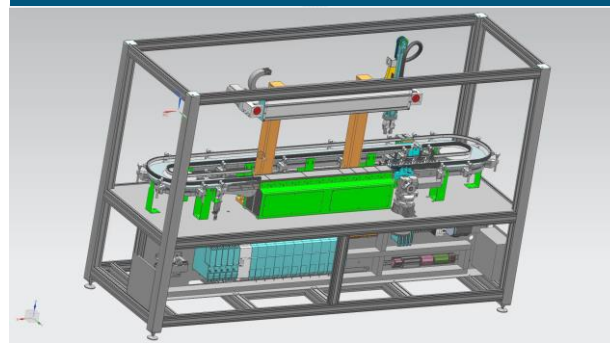
Detailed Process



Optimized Process

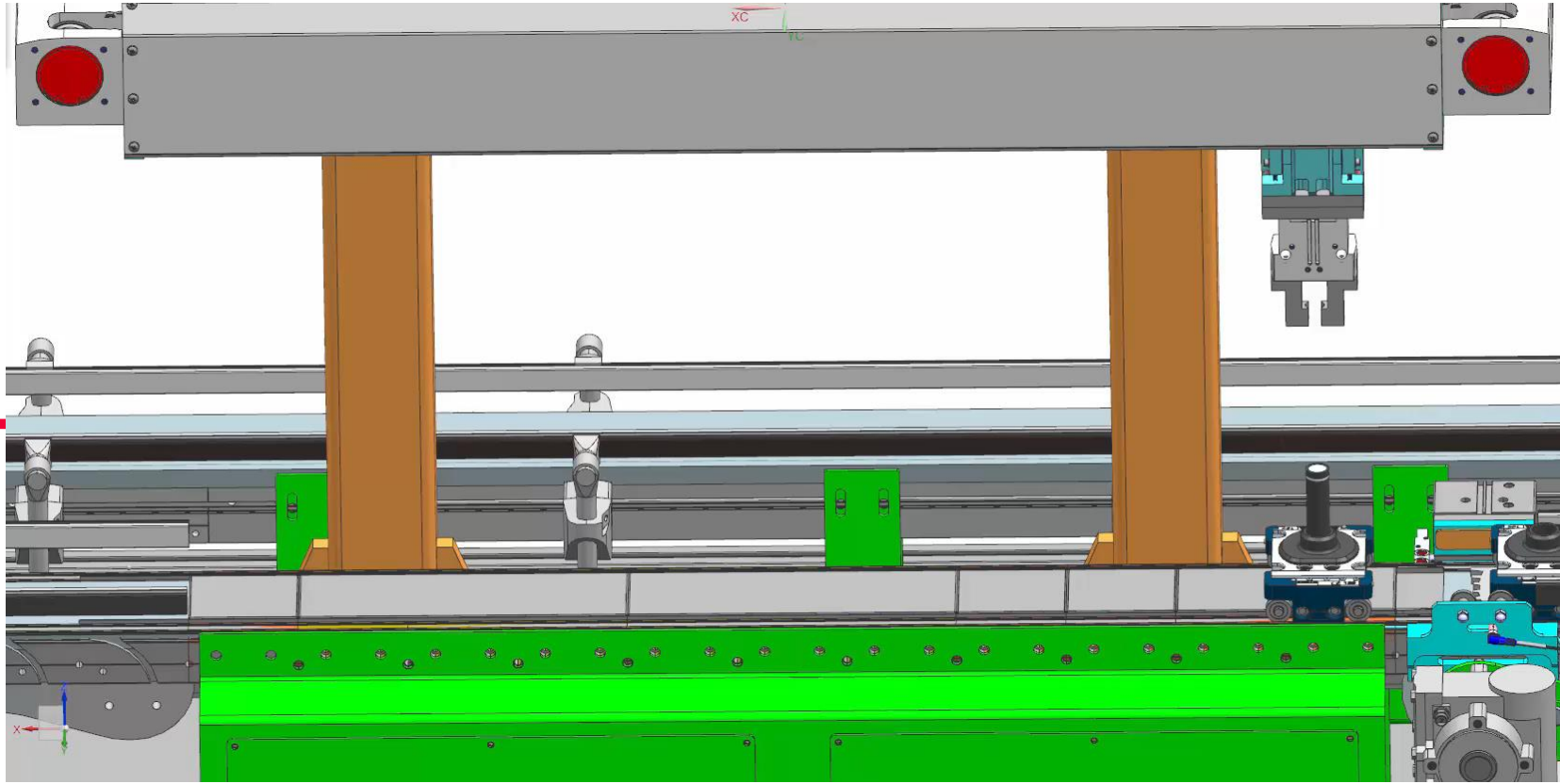
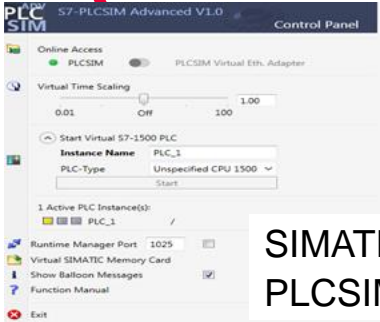


Complex Process



- Use of simulation in mechatronics concept phase
- Validation of concept
- Presentation and communication of concept
- Basis for further Detailing in multi-disciplinary engineering

MCD HiL Demonstration: Festo Multi-Carrier-System MCD connected to a SIMATIC S7-1517 T-CPU



SIMATIC WinCC Runtime Advanced

SIEMENS SIMATIC HMI

PoC4I Current Mode : Demo Current State : Stopped
 Detected key : Blue inserted

Manual
Automatic
Demo
Maintenance

⏪ ⏩ 150

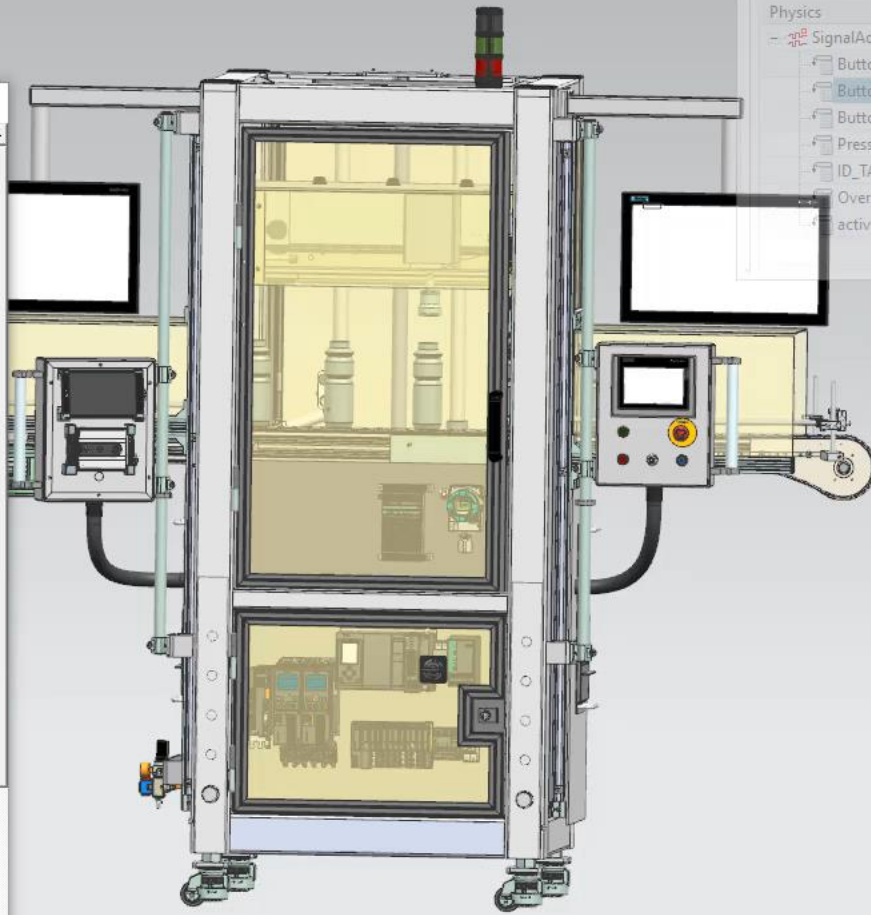
50 60 80 100 120 140 160 180

Head measuring cycles : 150 → 300 ms

⚠️ "SEQUENCE_PRODUCTION_IDB"

AUTO
▶▶ ⚠️ 🔧

TOUCH



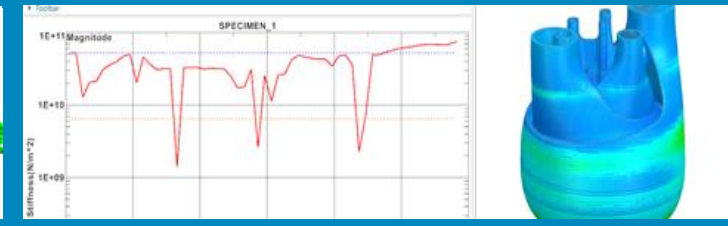
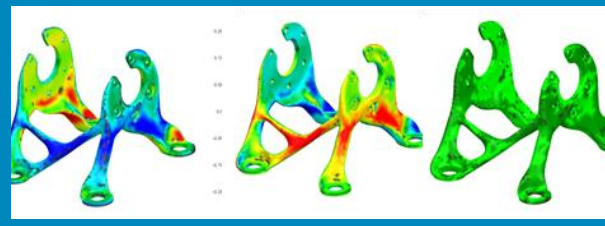
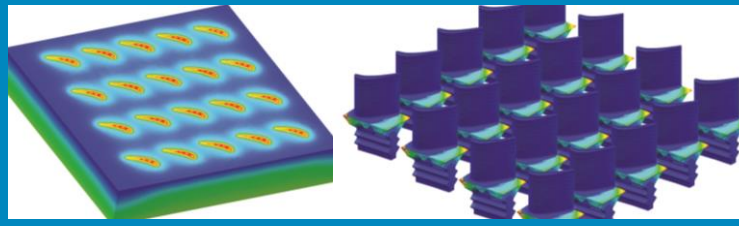
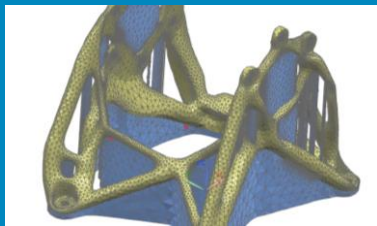
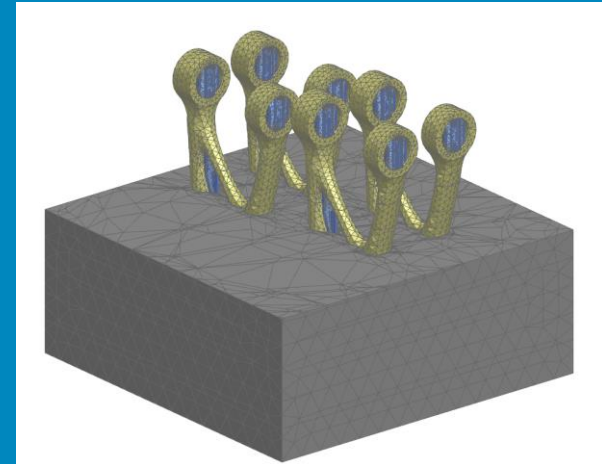
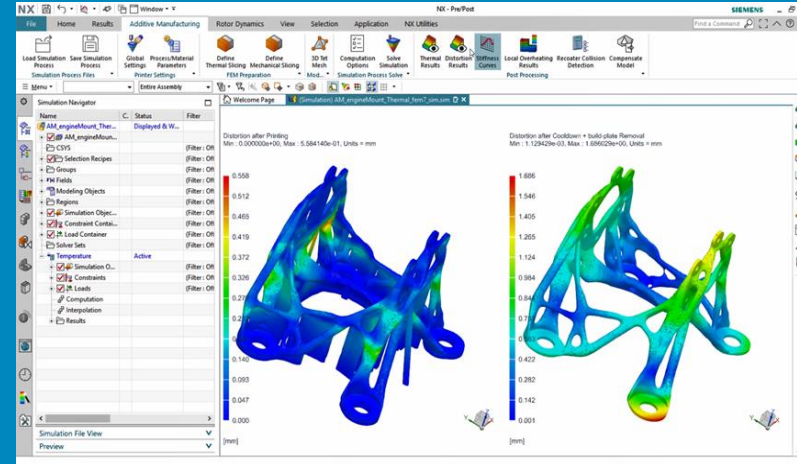
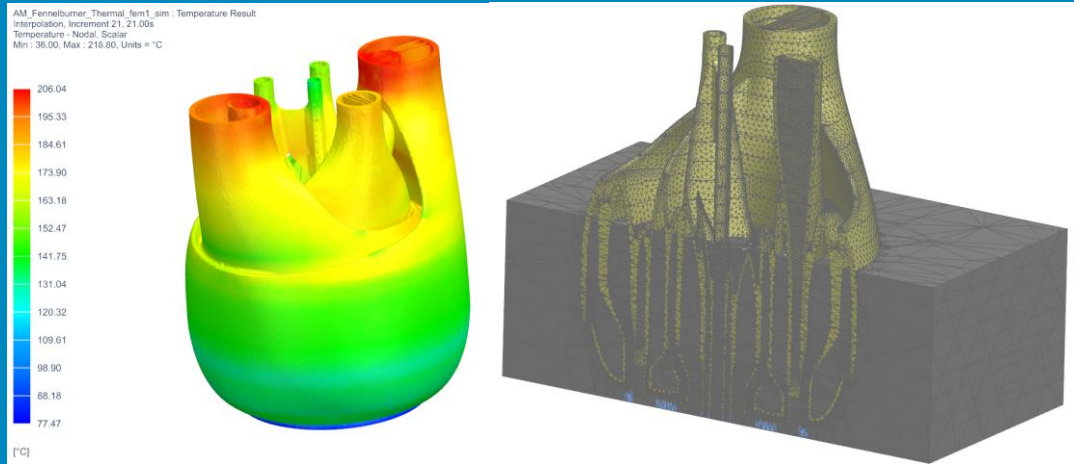
Runtime Inspector

Inspector | Graph | Snapshot

Physics	Graph	Export	Value
- SignalAdapter_SIL_CmdBox			
ButtonStart			false
ButtonStop			true
ButtonReset			true
PressureOverride	<input type="checkbox"/>	<input type="checkbox"/>	8192
ID_TAGS	<input type="checkbox"/>	<input type="checkbox"/>	9
OverrideSafetyFeedback			false
active			true

| Additive

Additive Manufacturing



Build process simulation

Thermo-mechanical multiphysics

Distortion & compensation

File Home Results View Selection Powder Bed Fusion Analysis Application NX Utilities

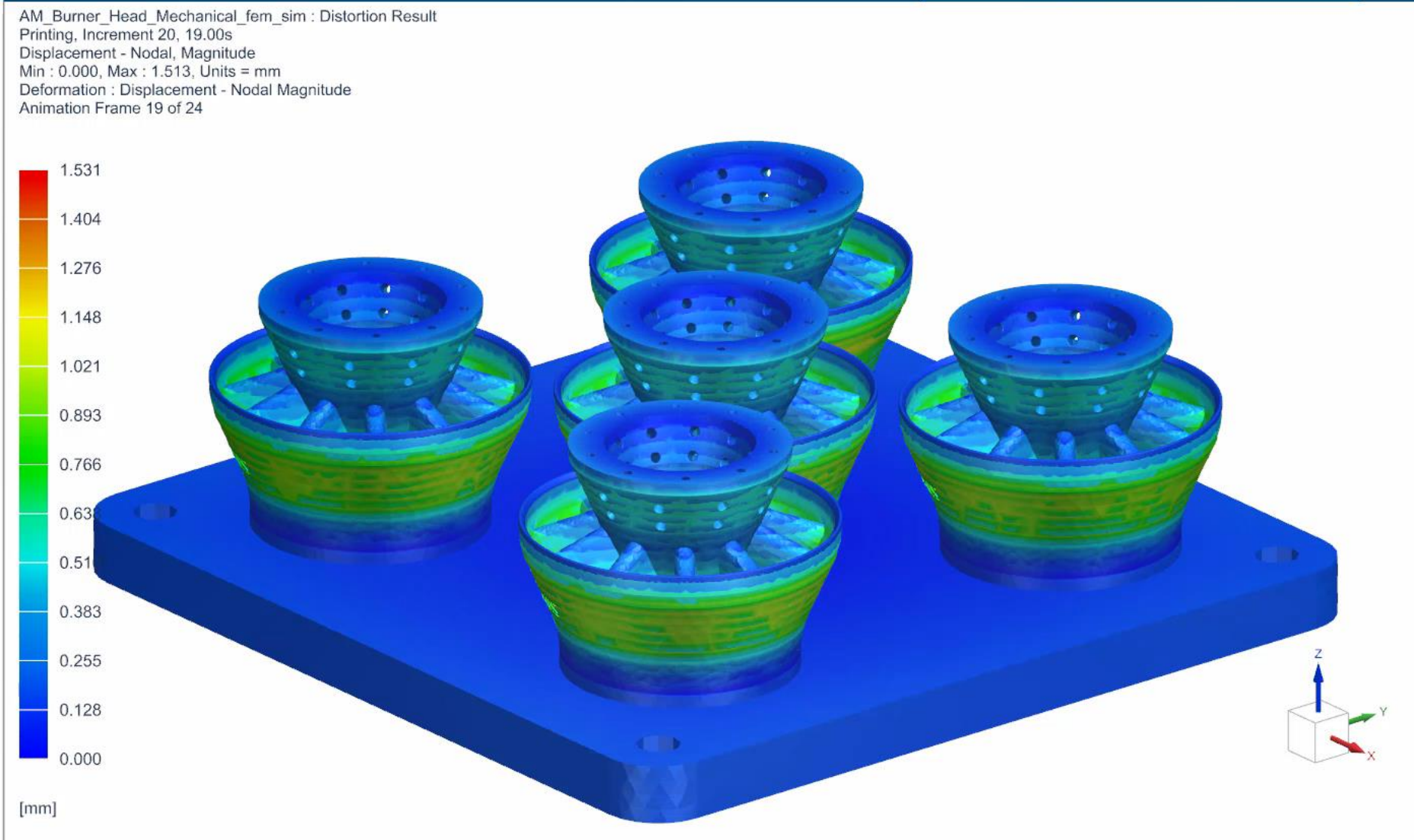
Type Here to Search

Return to Home Update Single View New Snapshot Contour Plot Edit Post View Display Result Tools Animation Manipulation Curve Operation Function Plot

Post Processing Navigator

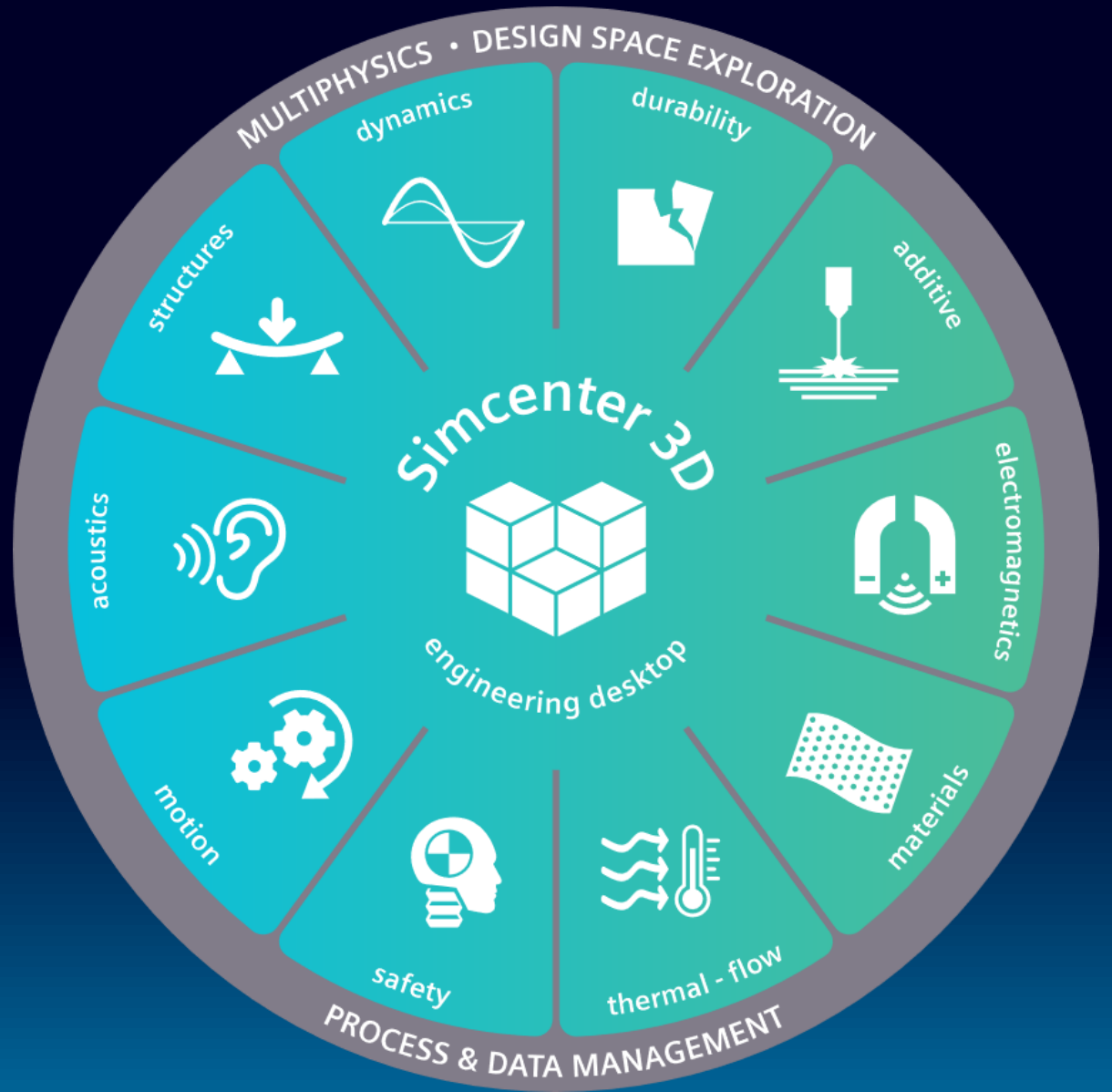
Name	Color	Description
+		Stress [Normal] - ...
+		Strain - Element-N...
+		Equivalent Plastic ...
+		Increment 3, 2.00s
+		Increment 4, 3.00s
+		Increment 5, 4.00s
+		Increment 6, 5.00s
+		Increment 7, 6.00s
+		Increment 8, 7.00s
+		Increment 9, 8.00s
+		Increment 10, 9.00s
+		Increment 11, 10.00s
+		Increment 12, 11.00s
+		Increment 13, 12.00s
+		Increment 14, 13.00s
+		Increment 15, 14.00s
+		Increment 16, 15.00s
+		Increment 17, 16.00s
+		Increment 18, 17.00s
+		Increment 19, 18.00s
+		Increment 20, 19.00s
+		Increment 21, 20.00s
+		Increment 22, 21.00s
+		Increment 23, 22.00s
+		Increment 24, 23.00s
+		Increment 25, 24.00s
+		Cool Down
+		Support Removal
+		Inspection Results - Cool ...
+		Imported Results
+		Viewports
+		Contour Plots

AM_Burner_Head.prt (FEM) AM_Burner_Head_Thermal_fem.fem (FEM) AM_Burner_Head_Mechanical_fem.fem (Simulation) AM_Burner_Head_Mechanical_fem_sim.sim



| Performance Engineering

Simcenter 3D





Give me answers ...digitally

Will it break?

How long will it last?

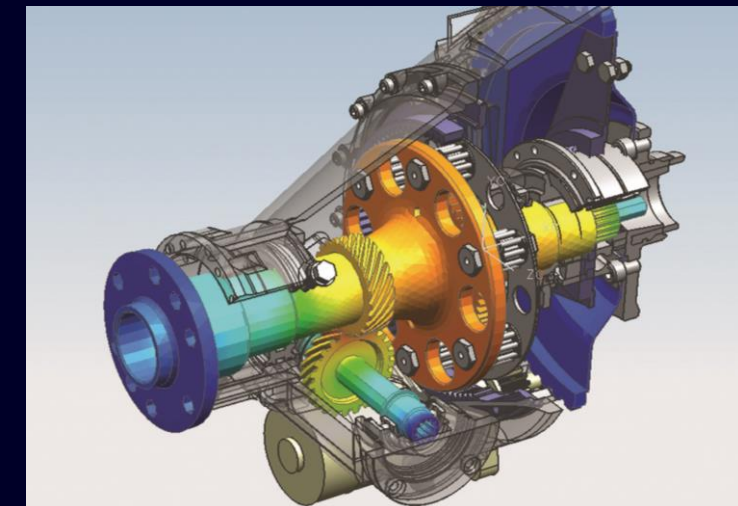
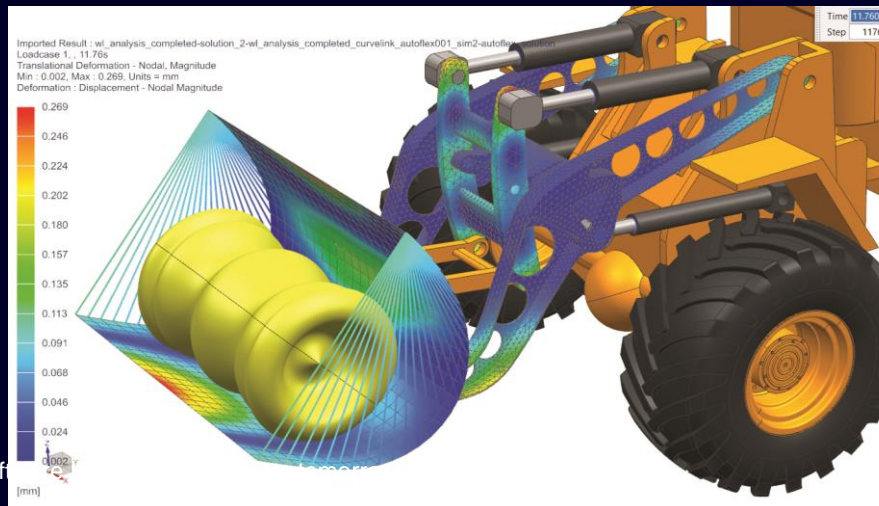
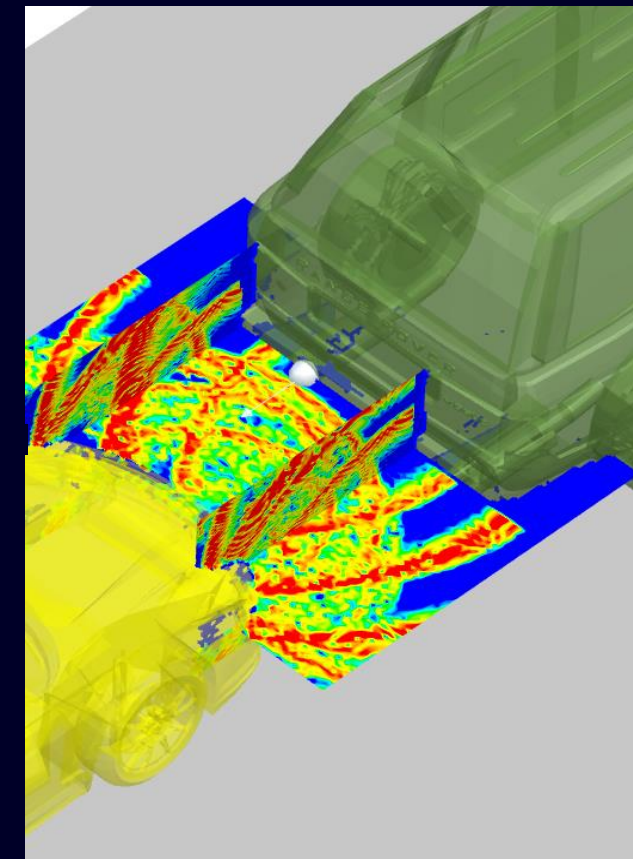
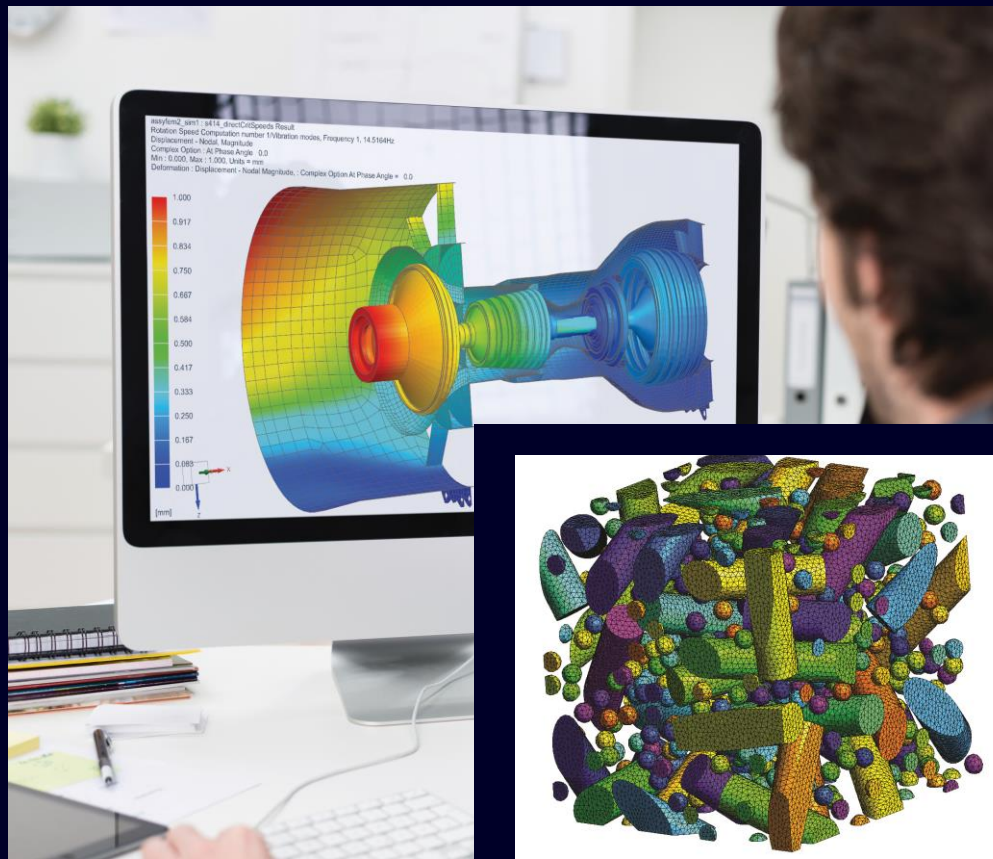
Is it noisy?

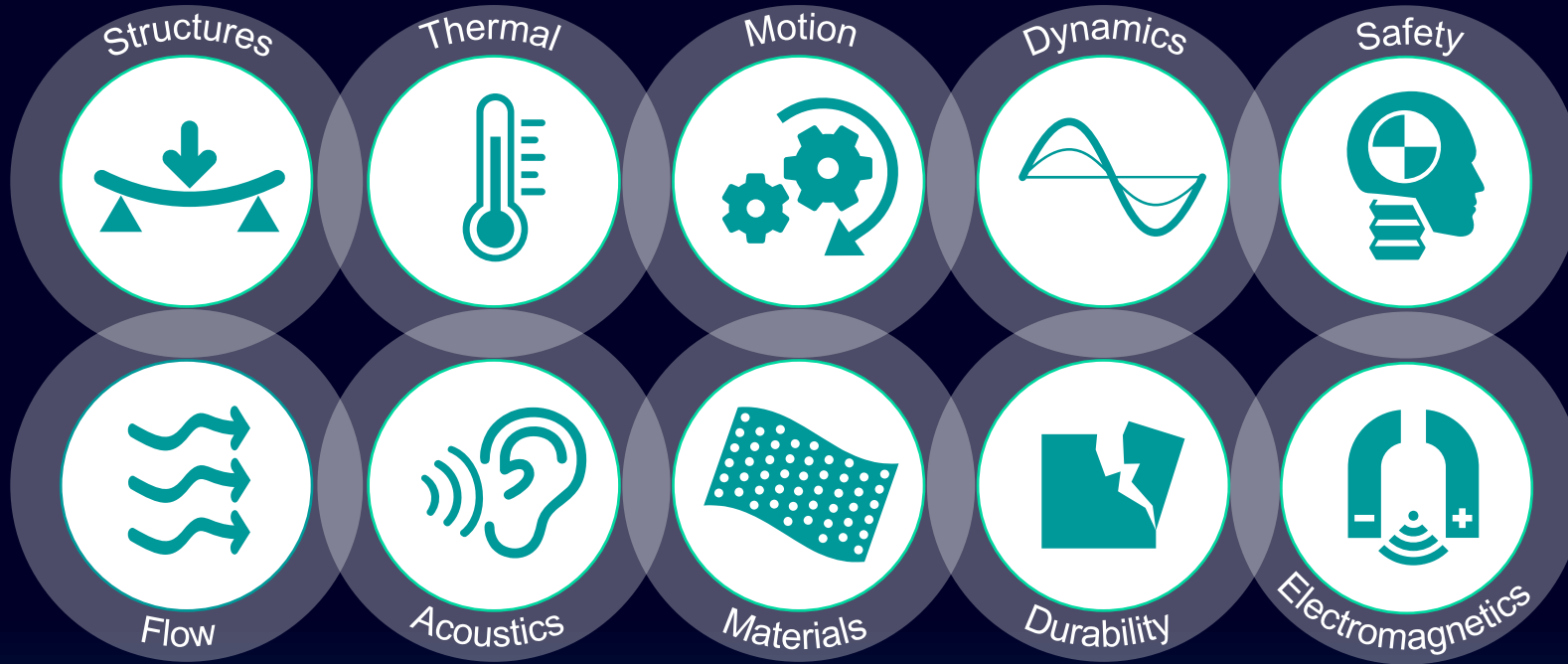
Does it get too hot?

Is the motor the right size for
the load?

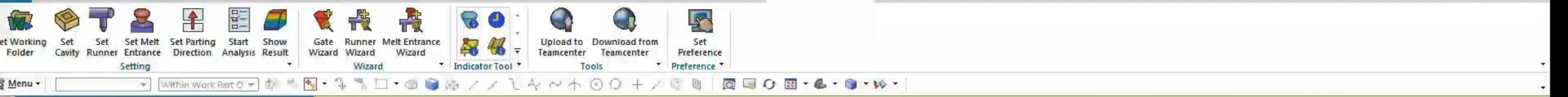
Can I control it?

Will it print in the right shape?





More collaboration among domains is needed



Show Result

Analysis Result

Run1

Description: New run for virtual-molding trial

Display Result

Criteria: None

Display Mode: Classic Mode

Analysis: Filling

Result Type: Melt Front Time

XY Plot:

Result Adviser:

Display Setting

Animation Setting

Percentage Step: 5.0000

Percentage: 75.0000

Pause:

Stop:

Animation Speed:

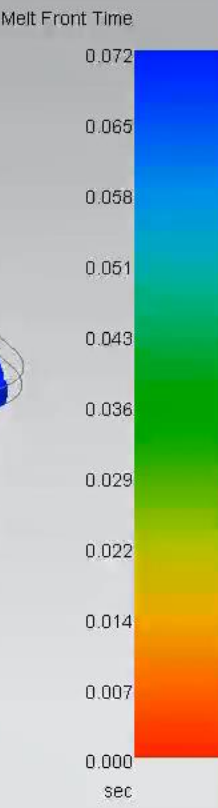
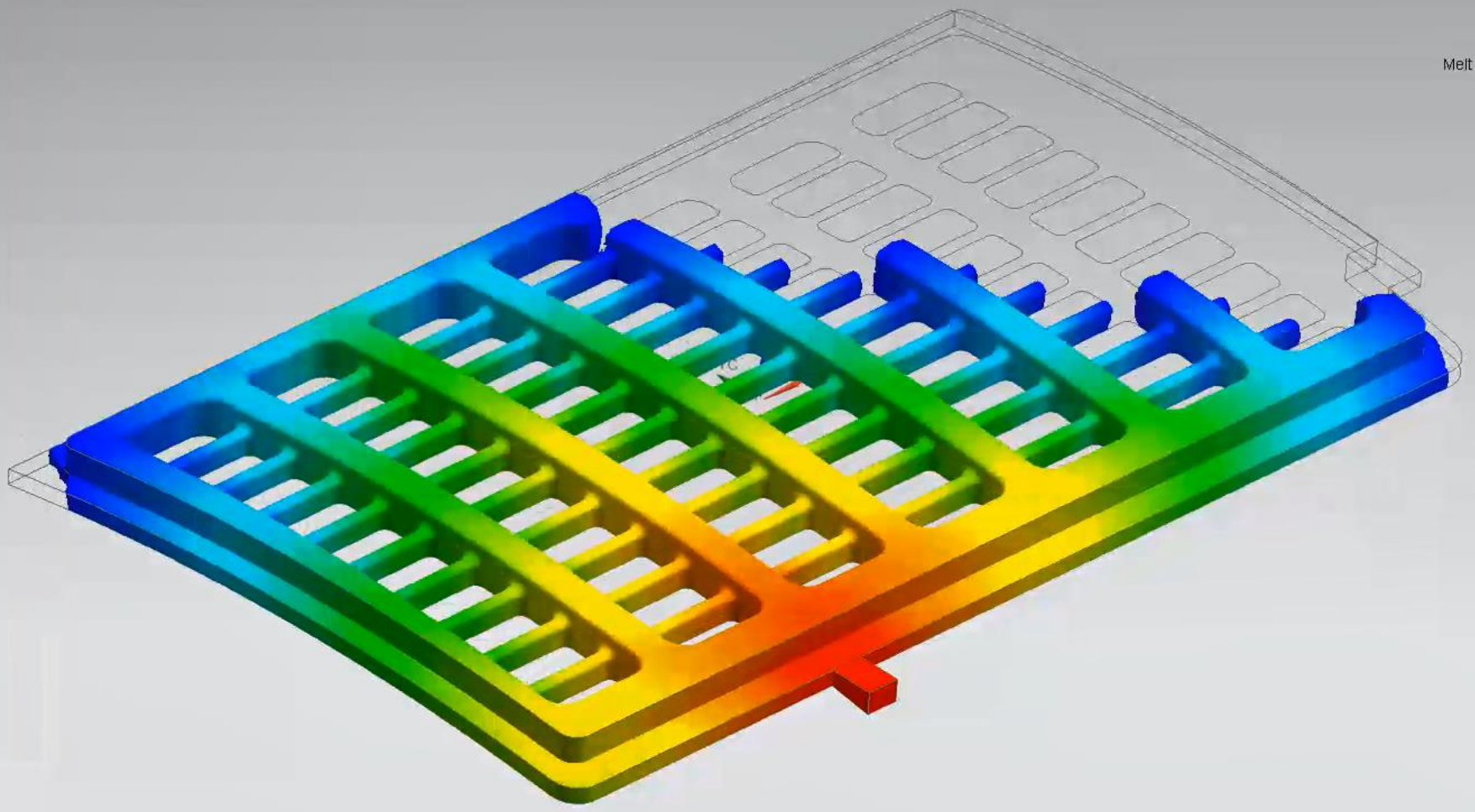
Views Tool

Save Animation as Files

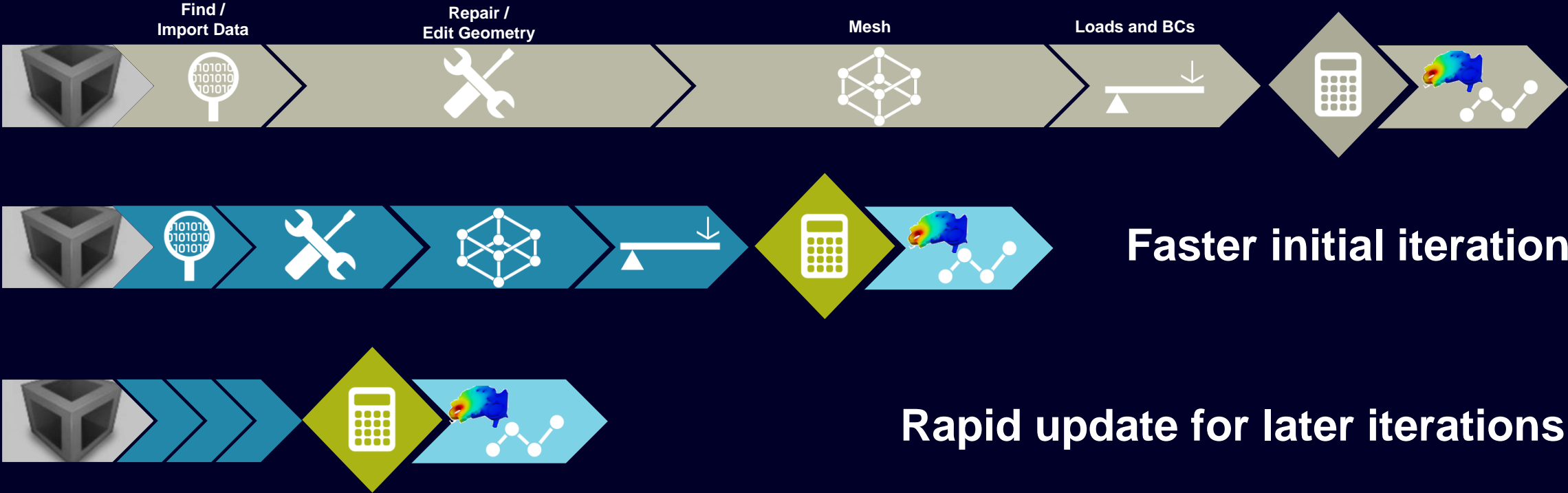
Generate Report

Export Result to Moldex3D Viewer

Close



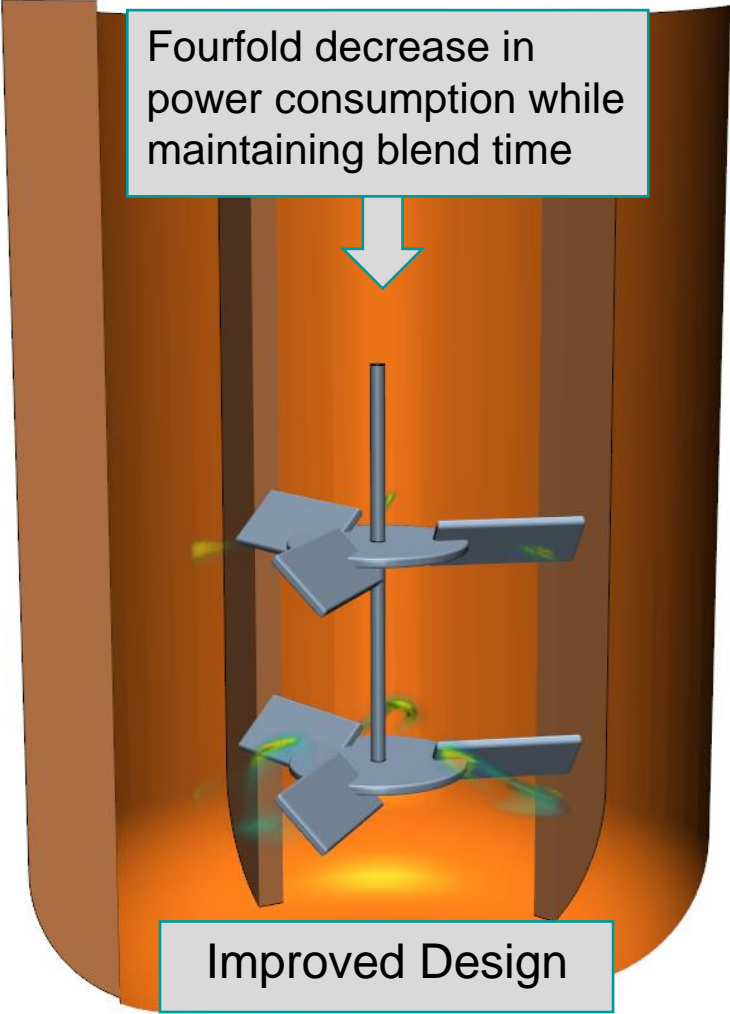
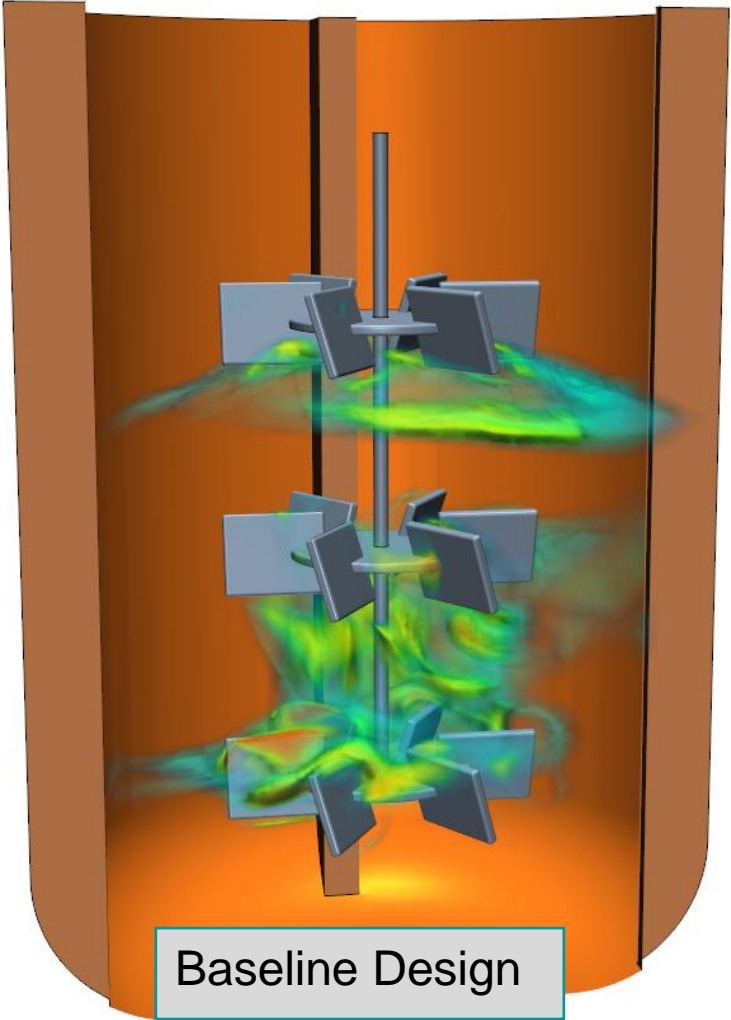
Simcenter 3D vs. traditional CAE



Simcenter 3D

| Design Space Exploration

Driving Innovation Through Simulation



| Contact

Published by Siemens DI Software

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