

A 3D CAD model of a mold assembly is shown. The mold is rendered in a light gray, semi-transparent style. Inside the mold, a fluid flow simulation is visualized using a color gradient: blue for the inlet, transitioning through green and yellow to orange and red for the outlet. The flow lines are depicted as curved, stream-like surfaces, indicating the path and velocity of the fluid within the complex mold cavity. The background is a soft, out-of-focus image of the same mold assembly.

Moldflow Summit 2018

What's new in Moldflow 2019

Hanno van Raalte

Product Manager for Moldflow products at Autodesk





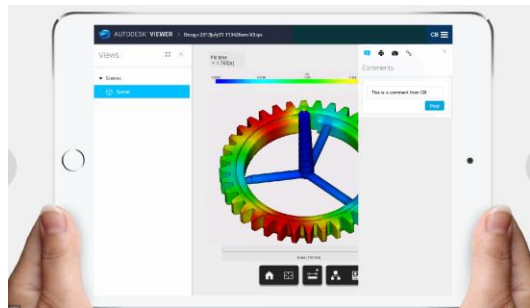
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MOLDFLOW®



40 YEARS

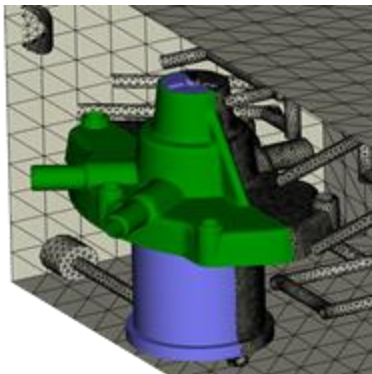


Release Overview Moldflow 2019



Market Impact

- Shared Views (Snapchat for Engineers)
 - Share a 3D images with your colleague
- Latest CAD translators:
 - Inventor, Alias, Siemens NX, Creo, SolidWorks, Catia
- Temperature dependence in Helius PFA
 - Temperature Interpolation
- Fusion360 Ultimate for Synergy and Adviser:
 - Model fixing (replaces SimStudio Tools)
 - Access to all Fusion 360 Ultimate functionality:
 - Mechanical Simulation
 - Milling
 - Rendering, etc.



Productivity & Customer Intimacy

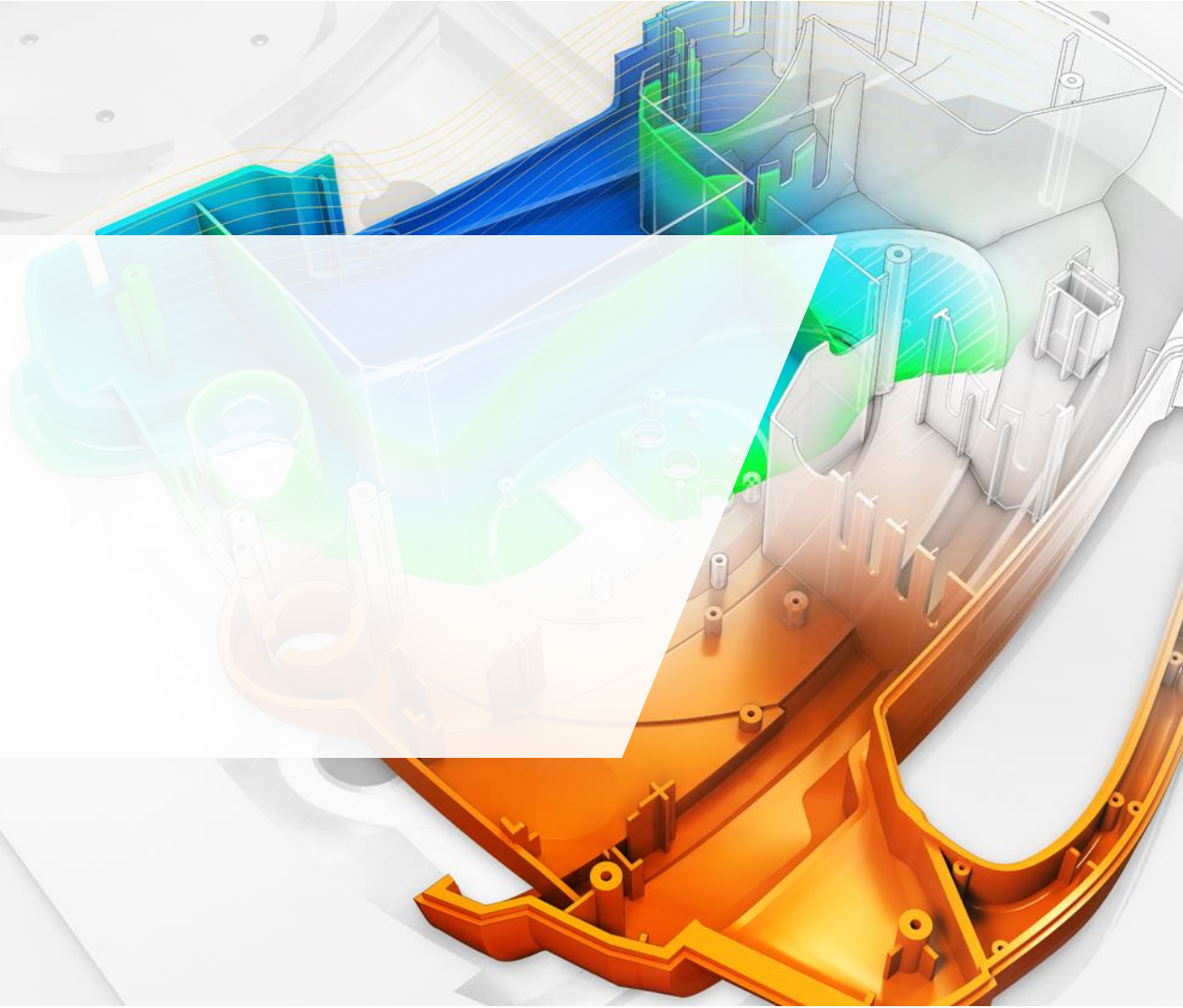
- Simulation Job Manager Improvements
 - New file transfer protocol
 - Bug fixes
- SynergySpeed improvement
- Usability improvements:
 - CAD Body/Face/Edge selection
 - Meshing GUI improvements
 - Cutting plane controls (layer property)
- Meshing updates:
 - Specify critical dimensions on CAD
 - Dual Domain to Midplane with thickness
 - Setup valve gates on curves



Leadership

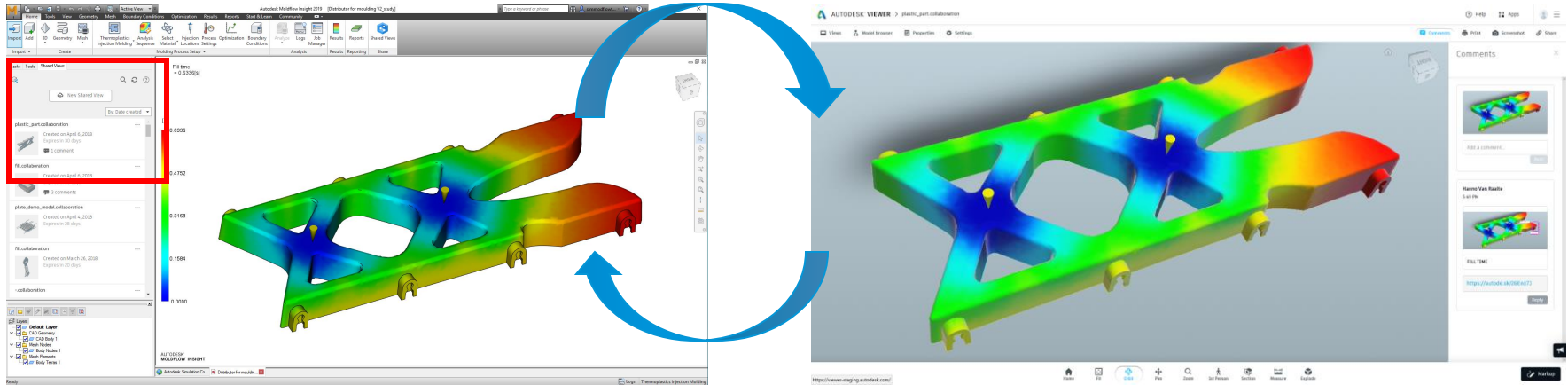
- Fast Conformal Cooling Solver
 - ~5x faster
 - Parallelized
 - Supported on Linux
- Various accuracy improvements
 - Fiber accuracy
 - 3D Flow with Inertia and Gravity improvement
 - MuCell improvements
 - Core shift accuracy improvement
- Coolant Flow analysis without running the temperature solve.
 - Including Pump
- Sink marks for over-molding
- Solver API for Powder Inj. Molding

Moldflow 2019.0 Release Highlights

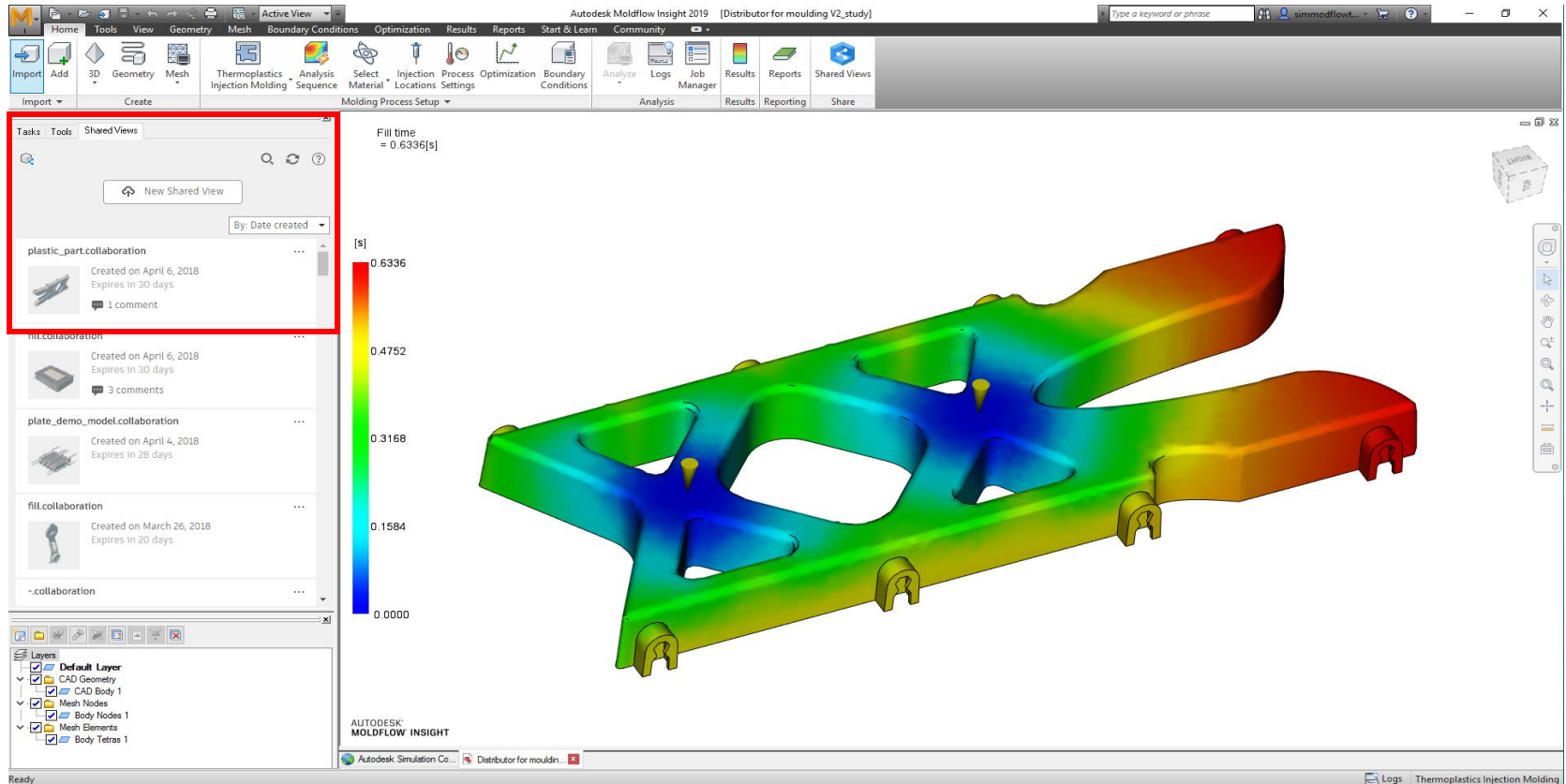


Shared Views for Collaboration

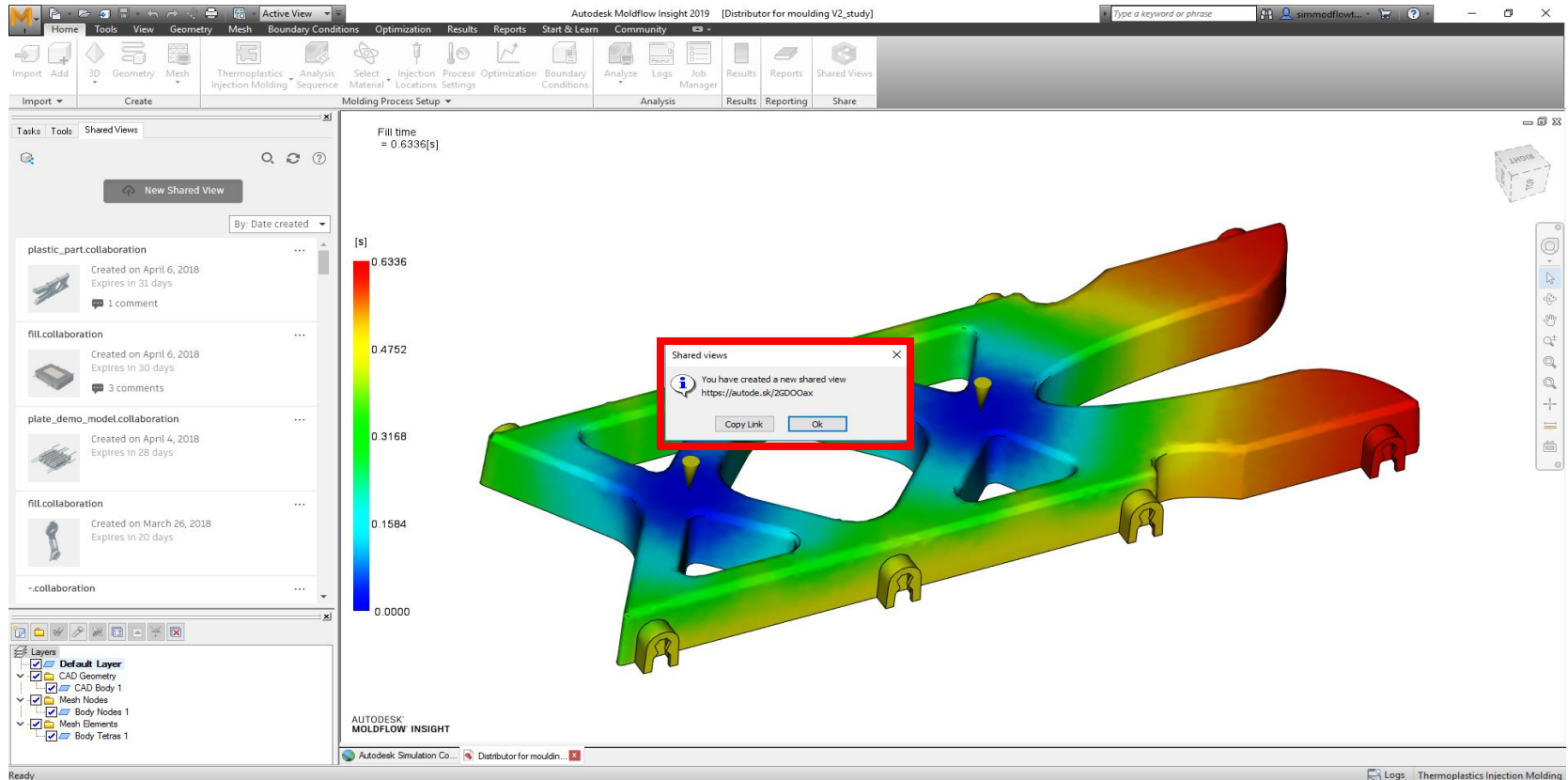
- 3D image of a single result, viewable in browser based viewer
- Distribute through to collaborators through link
- Quick comments and Comments/Mark-ups
- Automatically deletes after 30 days
- For Subscription customers only



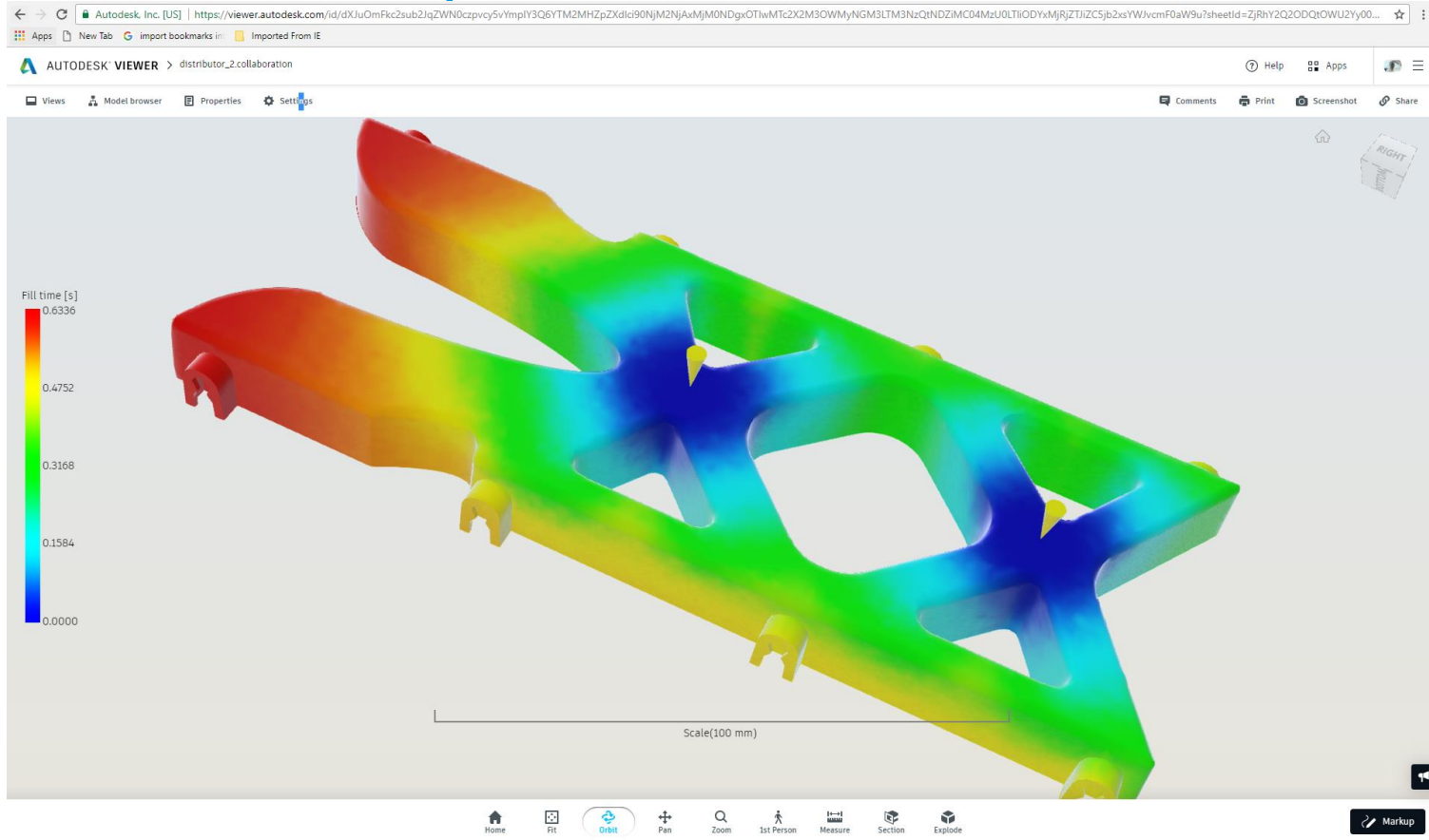
Shared Views: Export a view



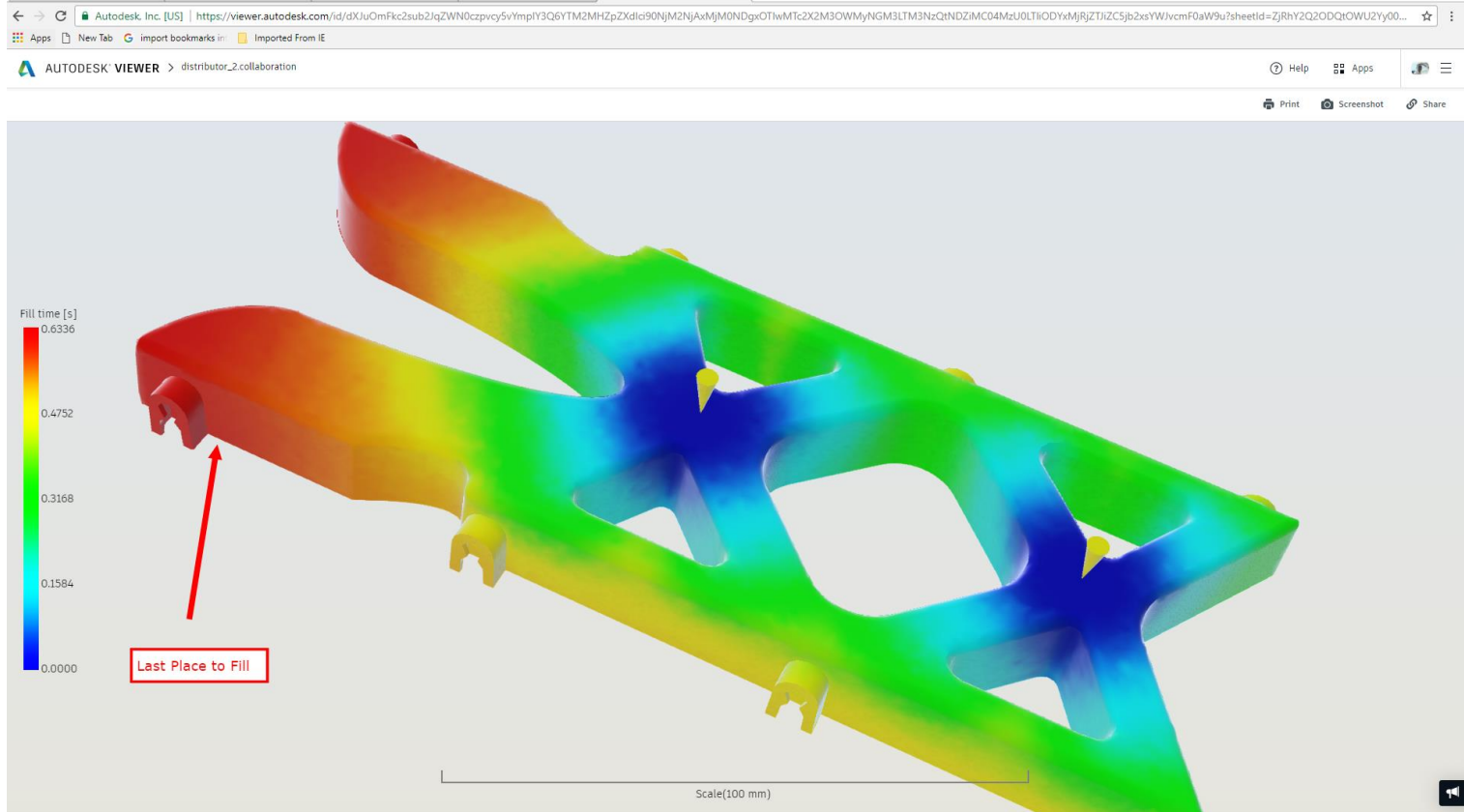
Shared Views: Copy and send the link



Shared Views: Export a view



Shared Views: Make Markups



Shared Views: Send comment back

Autodesk, Inc. [US] | <https://viewer.autodesk.com/id/dXJuOmFkc2sub2lqZWNOczpvcy5vYmplY3Q6YTM2MHZpZXdlc90NjM2NjAsMjM0NDgxOTIwMTc2X2M3OWMyNGM3LTM3NzQtNDZlMC04MzU0LTlODYxMjRjZTJlZC5jb2xsYWVjvcmF0aW9u7?designType=collaboration&openCom...>

AUTODESK VIEWER > distributor_2.collaboration

Views Model browser Properties Settings Comments Print Screenshot Share

Fill time [s]
0.6336
0.4753
0.3168
0.1584
0.0000

Scale(100 mm)

RIGHT

Comments

☐ Show Resolved

Add a comment...

Post

Hanno Van Raalte ☐ Resolve

7:52 PM

FILL TIME

<https://autode.sk/2F8VyHH>

Reply

Home Fit Orbit Pan Zoom 1st Person Measure Section Explode Markup

Shared Views: Receive comments

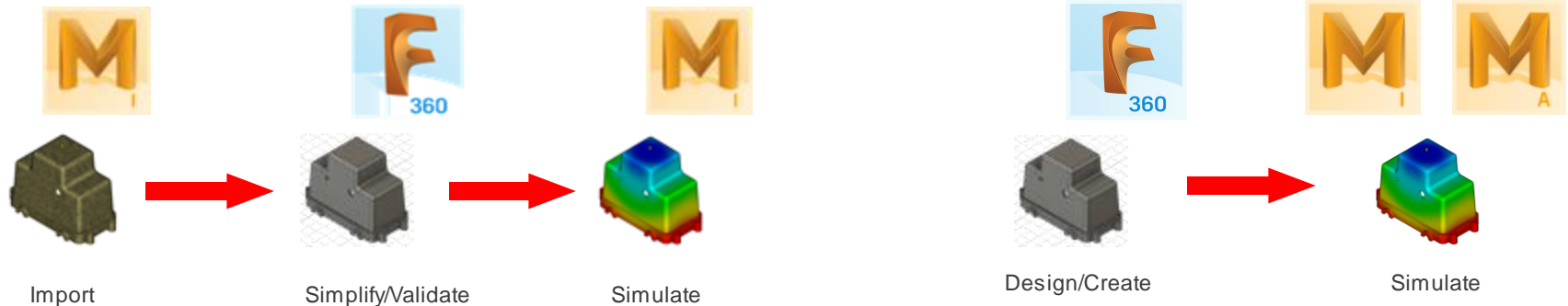
The screenshot displays the Autodesk Moldflow Insight 2019 software interface. The main window shows a 3D model of a plastic part with a color-coded fill time analysis. The color scale ranges from 0.0000 (blue) to 0.6336 (red) seconds. The fill time is indicated as 0.6336[s].

The left sidebar contains the 'Shared Views' panel, which lists shared views and allows users to add comments. A comment from Hanno Van Raalte, dated April 23, 2018, is visible. The comment includes a small image of the part and a 'Reply' button.

The bottom status bar shows 'Ready' and 'Thermoplastics Injection Molding'.

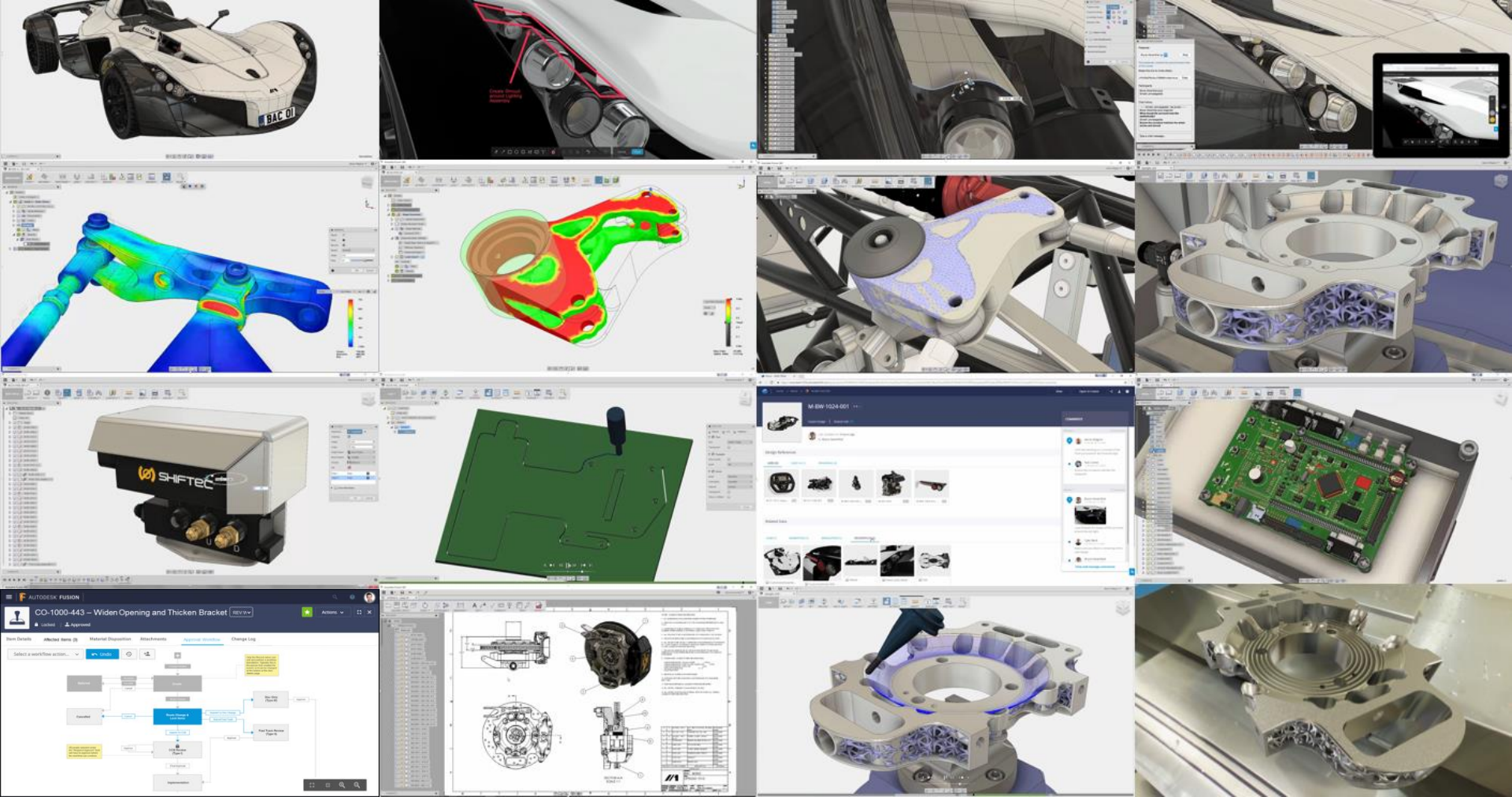
Moldflow → Fusion 360 Ultimate

- Access for Subscription customers only
- Includes Model fixing and simplification tools
- Access to all [Fusion 360 Ultimate](#) functionality
 - Design, Mechanical simulation, Shape Optimization, CAM, Rendering, etc.



Fusion 360 Ultimate





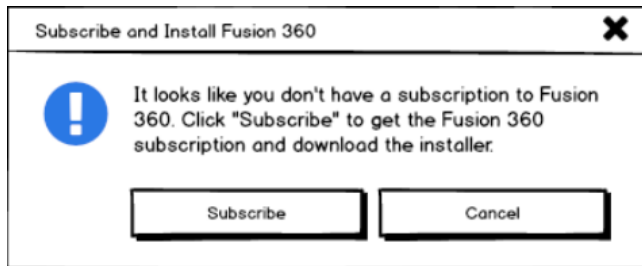
Fusion 360 Advantages

- Fusion 360 Ultimate
 - CAD/CAM/CAE platform (Launch to AGD)
 - Validate (Repair tool)
 - Up to date 3rd party CAD translators
 - Cloud data only (Save vs. Export)
- [YouTube](#)
- Fusion 360 Help - [Click Here](#)
- Fusion 360 Adoption Portal - [Click Here](#)



Entitlements, Installation & Subscription

- Synergy/Adviser Subscription
- Fusion 360 Ultimate
- Separate Installer
- Add-Ins with Moldflow Installers
- Useful links —
 - <https://www.autodesk.com/mf-install-fusion>
 - <https://www.autodesk.com/mf-subscribe-fusion>



Simulation Job Manager

- SJM 7.1
 - New efficient data transfer protocol
 - Minor bug fixes
 - Removed external connections
 - Resolved Multi-user access issue

Synergy Improvements

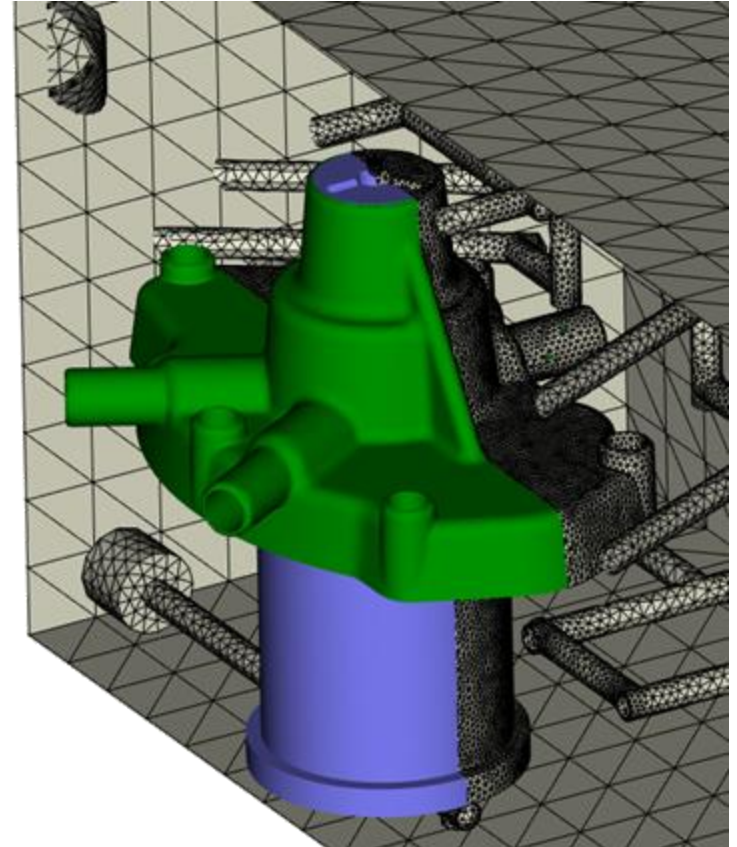
- Speed Improvements

- Load time of studies (10% ~20%)
- Layer creation (> 20%)
- Merging 1 node (~7x)
- Merging 25 Nodes (> 20%)
- Generation of mesh statistics

> 5X faster depending on the number of CPU cores

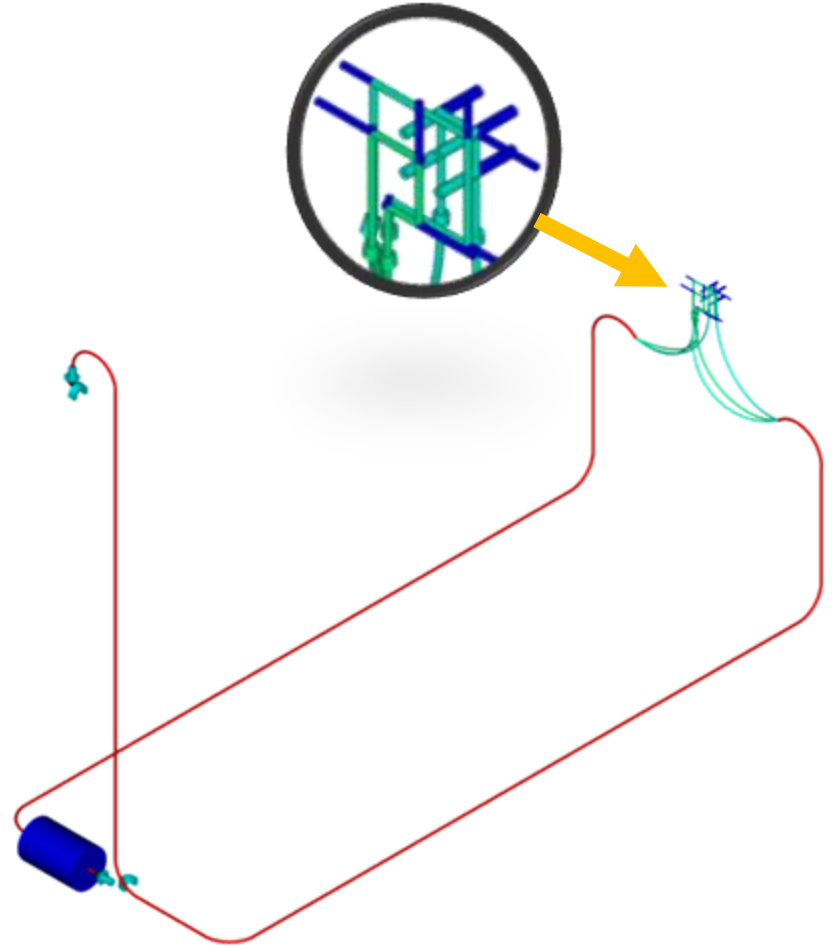
- Cutting plane improvements

- 'Allow Clipping' as a Layer property (not on results)



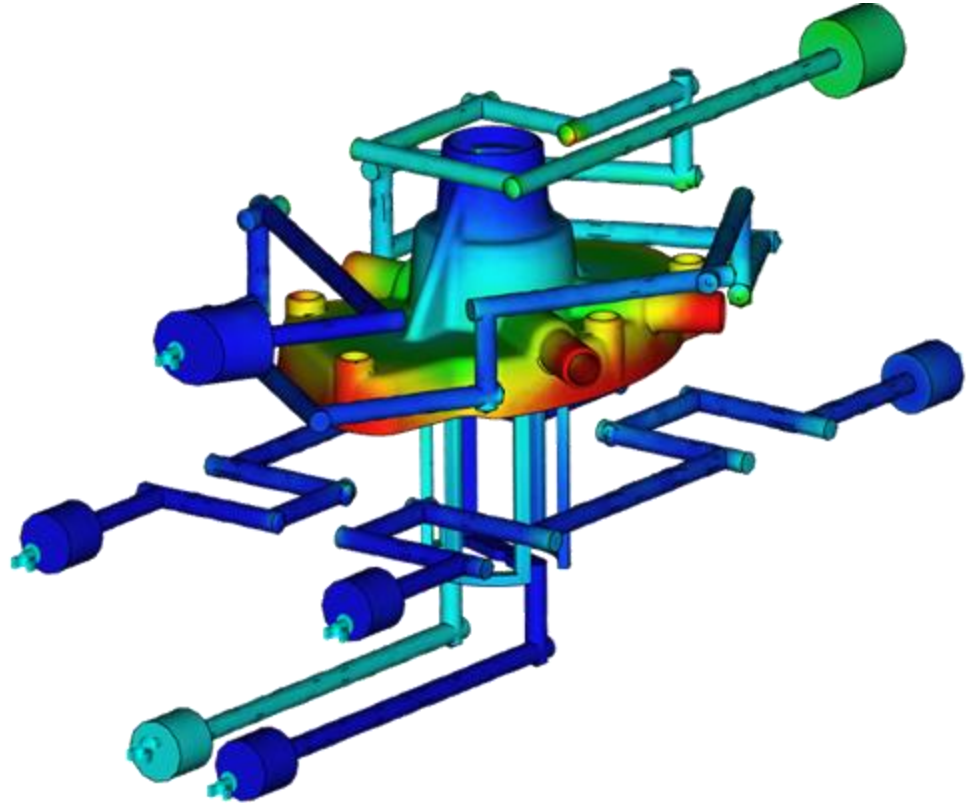
Coolant Flow Analysis

- Run Coolant flow analysis without thermal calculation
- New Pump characteristics
- 1D cooling elements only
- Additional results
 - K-factor (minor losses)
 - Friction factor
- New Options also available in Advanced Cool options



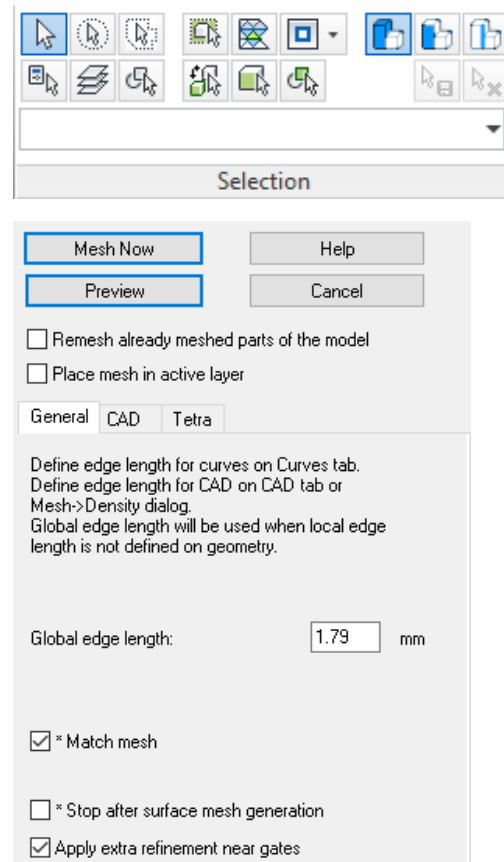
Faster Conformal Cooling

- Faster 3D Coolant flow solver
 - ~5x faster
 - Parallelized
- Linux Support



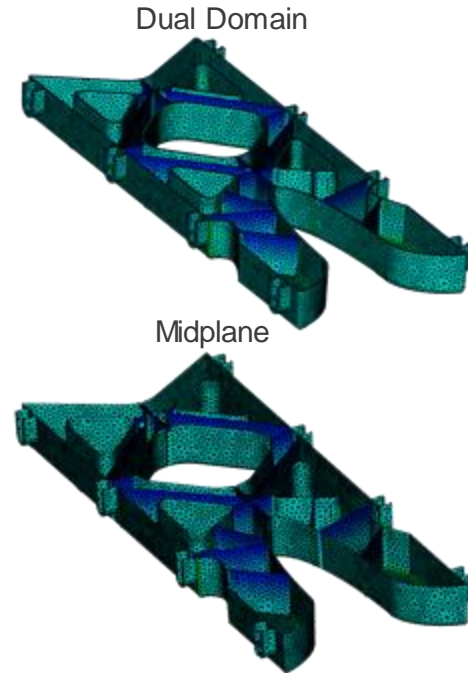
User Interface Improvements

- CAD Body/Face/Edge selection
 - Integrated with CAD modification tools
- Simplified meshing UI
 - “Preview” button accessible from any meshing tab.
 - Simplification of meshing tabs



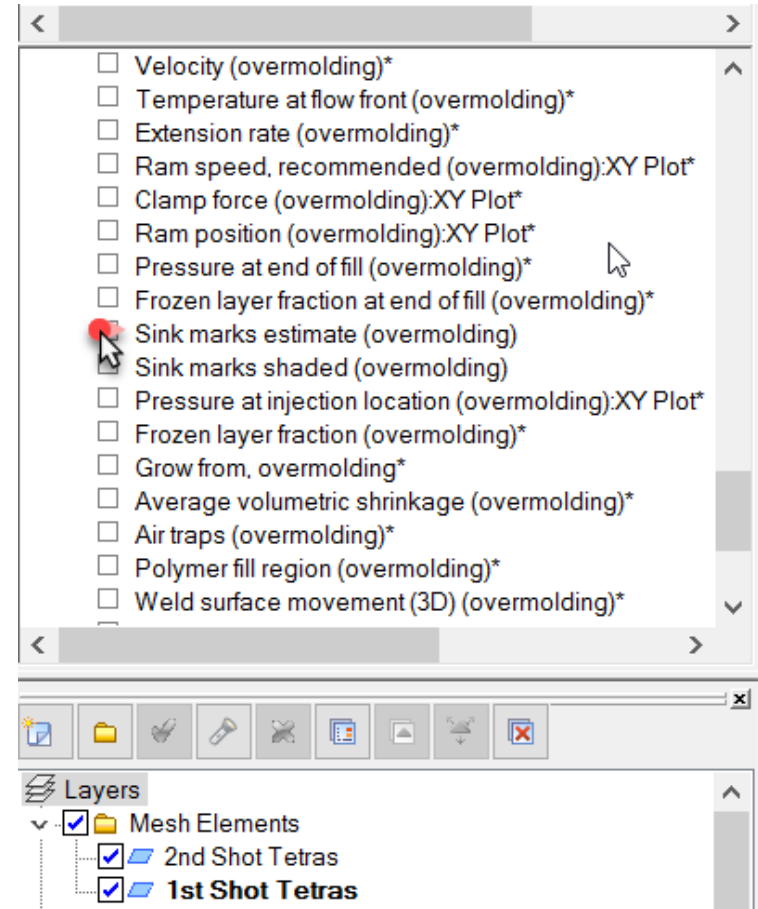
Reduce Analysis Setup

- New analysis setup option on CAD model
 - Specify critical dimensions on CAD model
 - Setup valve gate on hot gate curve
- Fast Midplane mesh workflow from Dual Domain mesh
 1. Mesh Dual Domain Model
 2. Change model type to Midplane
 3. Change mesh property to “Part surface (Midplane)”
 4. Delete one side or outside shell of the Dual Domain Mesh
 5. Ensure all geometry is connected (ribs, etc.)



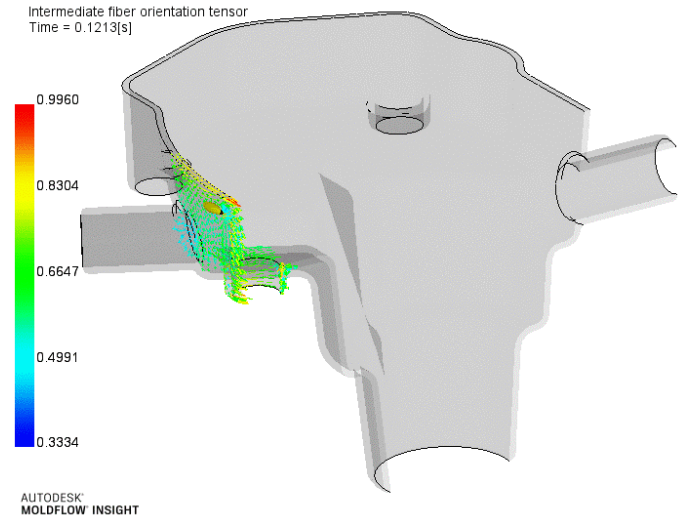
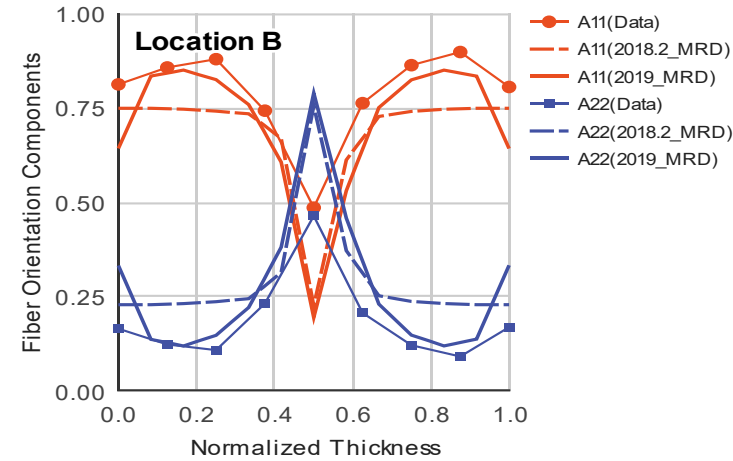
Sink Marks improvements

- Enabled results for 2 shot Overmolding
- Improved consistency in Sink Marks predictions between different mesh types



Fiber Orientation

- 3D Fiber orientation improvements:
 - Improved Default MRD model parameters
 - Improved skin orientation through improved fountain flow consideration
 - Material specific fiber orientation parameters would need to be refitted.
- Evolution of fiber orientation over time:
 - Intermediate fiber orientation tensor results available (off by default)
 - Midplane, Dual Domain and 3D



Other Solver changes for 2019

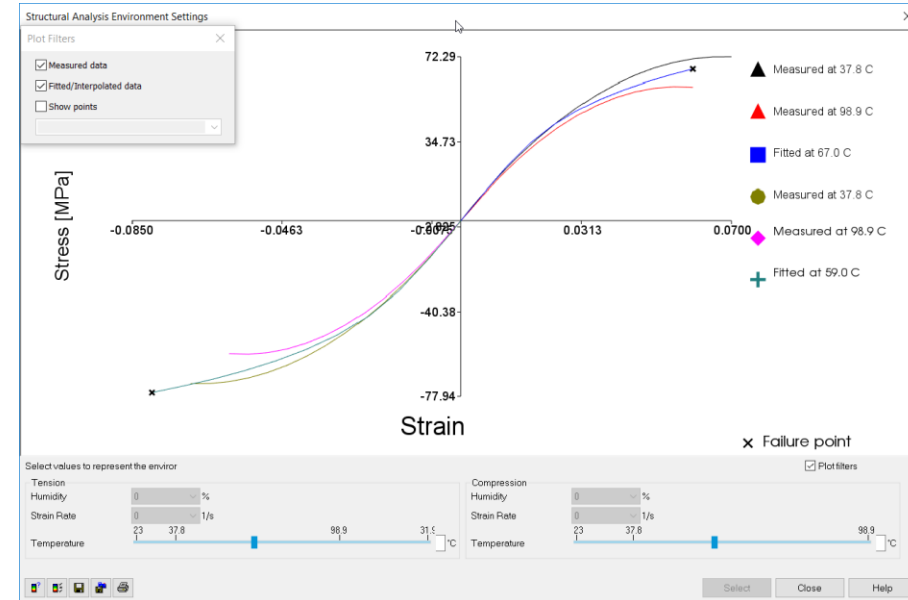
- **Precondition improvements for Reactive Injection molding.** The preconditioning analysis in Reactive injection molding has been improved.
- **3d Flow inertia improvements.** The way in which gravity and inertia is implemented in the 3D flow solver has been improved for this release
- **Core shift enhancements.** Core shift analysis has been enhanced to better handle large deflections
- **2 shot overmolding cool enhancements.** 2 Shot overmolding for cool has been enhanced to better deal with cases where the second shot part does not touch the mold during the first shot.
- **Compression element for sink mark analysis.** A compression element has been implemented in 3D flow so that better sink marks can be predicted for compression analysis.
- **Core back distance for micro cellular molding increased.** The maximum core back distance for micro cellular analysis has been increased from 10mm to 50mm
- **3D Flow AMG solver enhancements and valve gate enhancements.** The AMG matrix solver has been enhanced to deal with valve gates better and been enhanced for better general performance
- **3D Microcellular process properties can be exported by using the MPI2AUT/NAS script** Prior to this release 3D Microcellular process properties could not be exported using this script.
- **Powder Injection Molding analysis** now supports venting, coreshift support and solver API

Updated CAD import formats

- Updated CAD import versions:
 - Autodesk Inventor 2019 (*.ipt, *.iam)
 - Autodesk Alias 2018 (*.smt, *.smb)
 - Siemens NX12 (*.prt)
 - PTC Creo™ Parametric 4.0 (*.prt)
 - Parasolid V30 (*.x_t, *.x_b)
 - Solidworks 2018 (*.sldprt, *.sldasm)
 - Catia V5 (R6-6R2017) (*.catpart, *.catproduct)

Helius PFA Enhancements

- Temperature interpolation
 - Tension/Compression data required for at least 2 temperatures
- Now supports multi-filler materials
 - E.g talk and fiber filler
- Updated support for Structural FEA
 - Abaqus 2016, 2017
 - ANSYS 18.0, 18.1, 18.2, 19.0 (not supported on RHEL or SLES)
 - Autodesk Nastran 2018, 2018.1, 2018.2, 2019 (not supported on RHEL or SLES)



Updated Material database

- Total number of grades: 10,212
 - Grades added: 353
 - Grades amended: 327
 - Grades deleted: 92
- Specific data:
 - Grades with long-fiber length data: 134
 - Grades with specific Crystallization Morphology data: 32
 - Grades with default Shrinkage Properties data: 3523
 - Grades with Stress/Strain data: 55



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Moldflow | Release Locations

- FCS Release

- Autodesk Accounts → All Products & Services

- Dot Releases/Service Packs

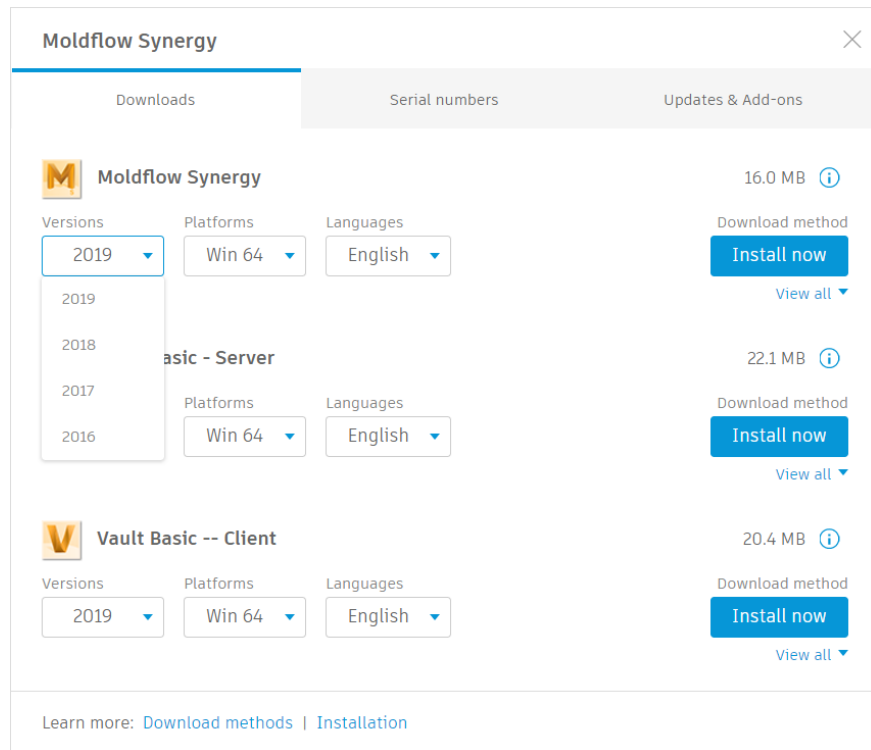
- Autodesk Accounts → Product Updates
- Autodesk Accounts → All Products & Services → Updates and Add-Ons

- Technology Preview

- Project Scandium (beta.autodesk.com)

- Moldflow Validation Documentation

- Simhub (simhub.autodesk.com)



CAD Doctor | End of Life

- Autodesk Simulation CAD Doctor will no longer be sold by Autodesk, but Elysium will directly offer '**CADdoctor for Autodesk Moldflow**'
 - Export UDM file or launch Synergy 2019 directly from CADdoctor for Autodesk Moldflow.
 - STEP and IGES files are included by default, other formats are licensed separately.
 - New mid-surfacing option is available for an additional fee.
- At the end of the maintenance contract, customers can renew maintenance directly with Elysium for about the same annual cost.
 - Requires a valid serial number

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Moldflow | Update to Latest License Manager!

- Important: Install the latest license manager (ADLM V11.14)

