AUTODESK

Moldflow Summit 2025: Automated Processes for Warped Part Analysis in Assemblies using Synera

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Today's Agenda

- 1 Introduction to Synera
- 2 Challenges in Injection Molded Part Design
- 3 Simple Moldflow Workflow in Synera
- 4 Challenges in with assemblies
- 5 Assembly Workflow in Synera



Introduction to Synera

🔅 Synera

Engineering will change. We will be one of the reasons.









50+ enthusiastic staff





by (A) SPARK CAPITAL







Synera

We live in a world where engineers...





...work sequentially Hardware development is still done in a linear process ဂိုဂိ

...are trapped in silos Engineers are split into disconnected teams like design, simulation and manufacturing



...use expert software

Experts use their own expert tools to provide a new work increment

...rely on their experience

Experienced engineers outperform others and become bottlenecks in collaboration

How can product development be accelerated today?

Synera

CAE feedback can take longer than the next CAD iteration



Current approaches in the market Manual work

Train or hire CAE engineers

In-house access

S Expensive

Outsource CAE

Cheaper

😣 Lower quality

😣 Management overhead

CAE inside CAD

Faster

S Lower quality & functionality

Automation

Expert tool scripts TCL, APDL, VBA...

Automation within tools

Single purpose

Scripts across tools Python Well known and free

S Lacks integrations

😢 Lacks visualization

In a perfect world, engineers can...

- Automate their development processes in an easy way
- Reuse, share and scale their best automations at minimal cost
- Assure repeatable quality when scaling
- Make their engineering processes transparent for others



A visual visual language made for engineers

Leverage automation

• Automate manual and recurring engineering tasks and steps in the product development process

Process Canvas

- Standardized visual language for all engineering work in an intuitive node editor
- Transparent process documentation to increases IP
 retention

3D Visualization

 Real time feedback of your automation to see the deliverable in any step





Major software vendors joined our open ecosystem

20+ Partners

Head start with domain leading partners.

60 Add-ins

Partner tools integrated in our platform.

1 Virtual Currency

Access everything through a single subscription.







Challenges in Injection Molded Part Design



How thick should my walls be?

What material should I use?

How much does my part cost?

Where should I manufacture my part?

How should I manufacture my mold?



Does my mold need cooling channels?

Is my part moldable?

Will my part withstand the loading conditions?

Will there be manufacturing defects?

How should my mold be designed?



How does all that translate into work?







Synera Example 1

Design optimization

Application: simple plate Goal: Find a design using available <u>design space</u> ... leading to low <u>warpage</u>















Example 1

Design optimization

Application: simple plate Goal: Find a design using available <u>design</u> <u>space</u> ... leading to low <u>warpage</u>

Further achievements: Simplicity

Documentation



Challenges working with assemblies



How thick should my walls be?

What material should I use?

Do I need to remanufacture my molds?

What order should I assembly my parts?

What happens when my parts are assemblied?

Will my parts fit together? a

Will my part withstand the loading conditions?

Is my part moldable?

Can I accept manufacturing defects?

How much deformation is acceptable?



How can we automate assembly analysis in Synera?









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Solution 🕨 🗉 🥥 🗸 View 👯 🔝 🗔 🗬





Bo Moldflow Asse...* Bo Create bolt forc...* +



Release candidate 😐 🖓 🗙



Synera	File	Edit	Tools	Help	Q	Search (
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Thank You!

Synera 🔇

Thank you

Get a demo with our CEO Daniel Siegel!

- Learn how visual programming empowers engineers
- Discover how to automate your workflows
- ${\dot {\scriptsize O}}\,$ Explore how to speed up your development process
- ${\mathscr D}\,$ Ask all of your burning questions in the Q&A session



synera.io/demo

