



SolidWorks 2013

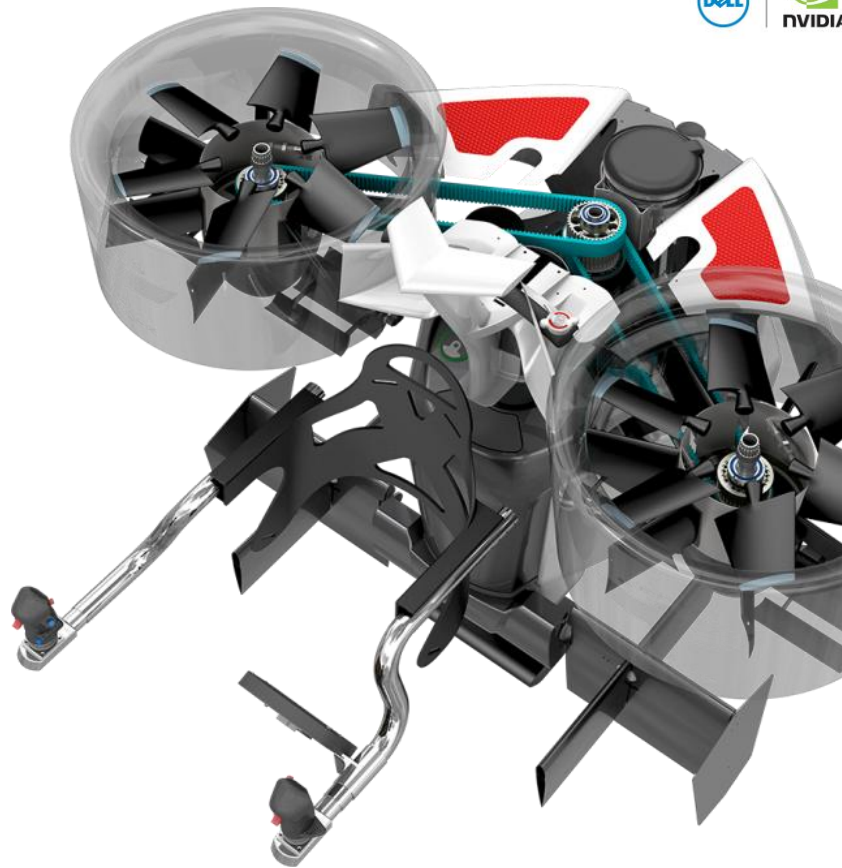
What's New, Part 1
Oliver Duncan & Mark Rushton

Wednesday, 14 November 2012

SolidWorks 2013

3D Design Simplified

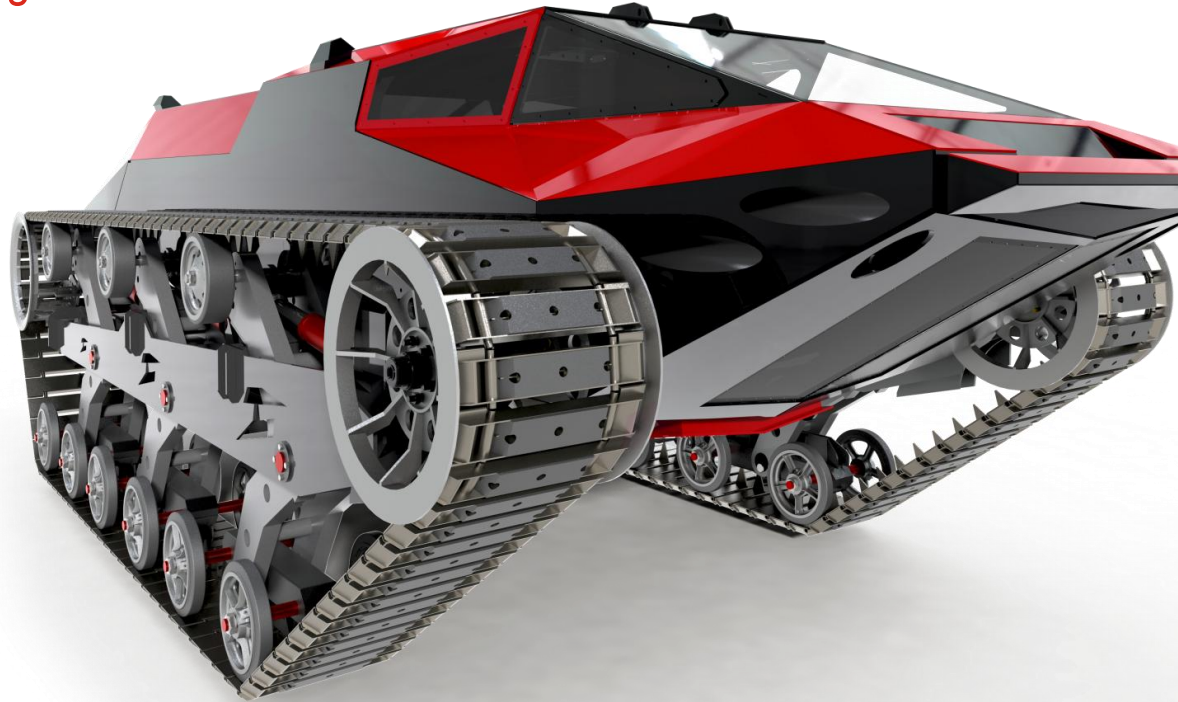
- Powerful Design Tools
 - ✓ Powerful New Products and Design Tools
- Faster Model Creation
 - ✓ More Efficient 3D Models
- Enhanced Collaboration
 - ✓ Wider Sharing and Increased Connectivity
- Improved Performance
 - ✓ Improved Performance and Productivity



Powerful Design Tools

Powerful New Products and Design Tools

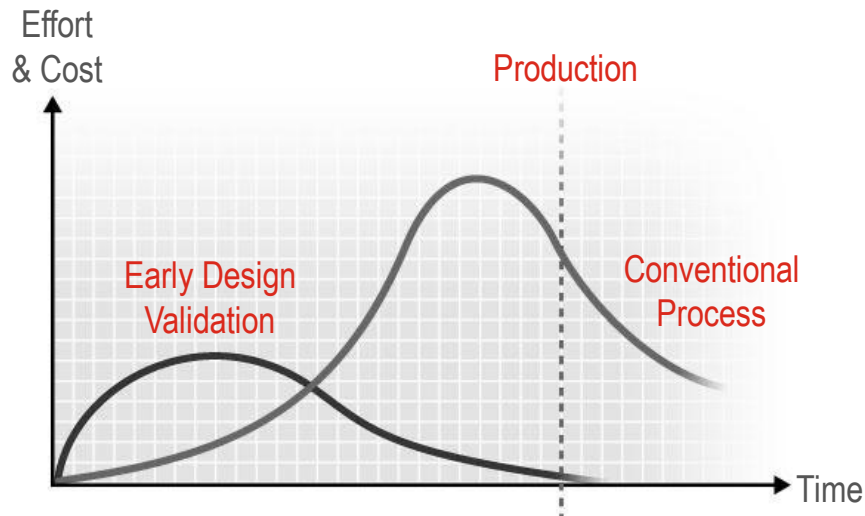
- SolidWorks Plastics
- SolidWorks Electrical
- SolidWorks Costing
- SolidWorks Sustainability



Powerful Design Tools

SolidWorks Plastics

- Focused on injection moulding
- Avoid expensive mistakes



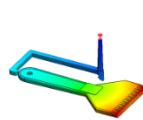
Powerful Design Tools

SolidWorks Plastics

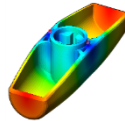
Plastics Professional

Flow

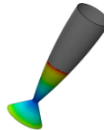
Filling



Multiple Gates



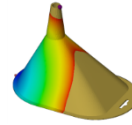
Short Shots



Weld Lines



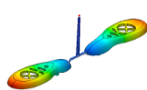
Air Traps



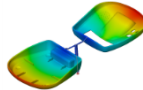
Plastics Premium

Flow & Pack

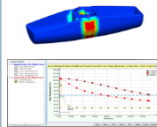
Multi-Cavity



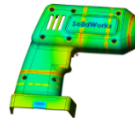
Runner Balancing



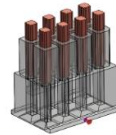
Results vs. Time



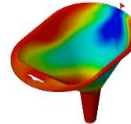
Shrinkage & Sink Marks



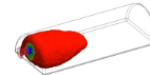
Inserts & Overmoulding



Multishot & Co-Injection



Gas-Injection & Valve Gates

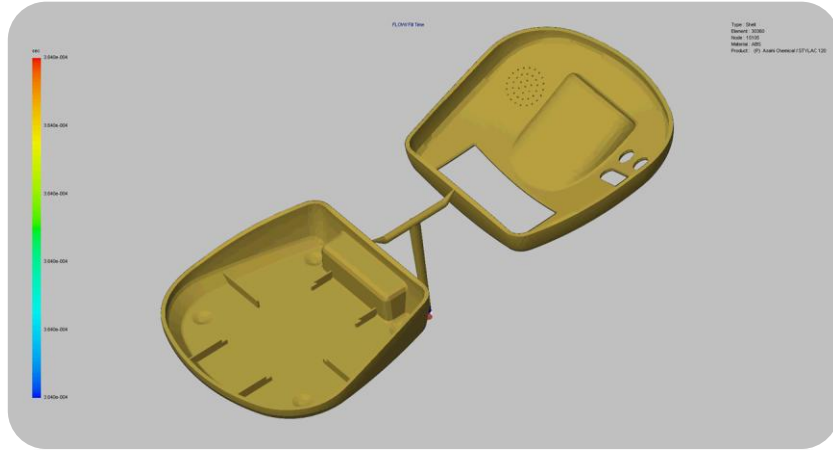


Fibre Analysis & Birefringence

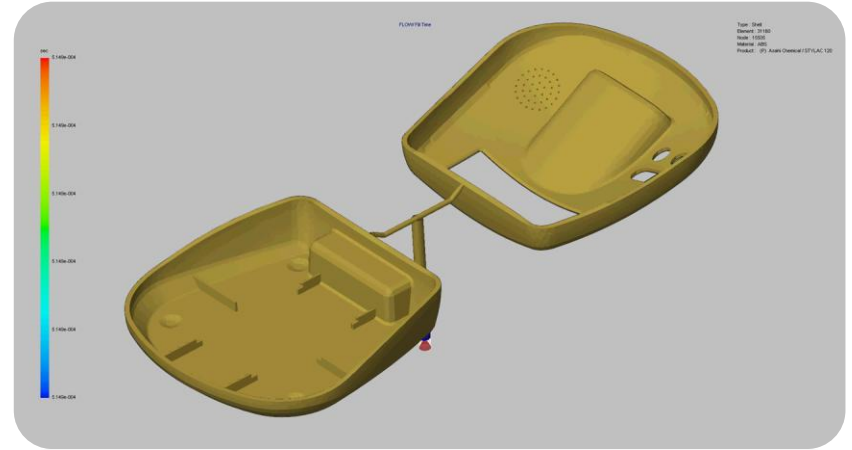


Powerful Design Tools

SolidWorks Plastics



Unbalanced

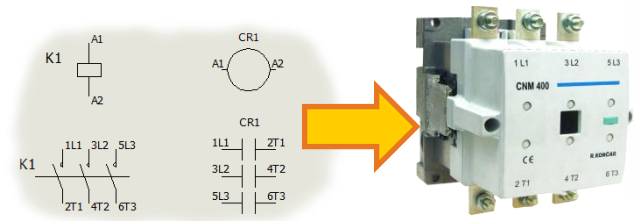
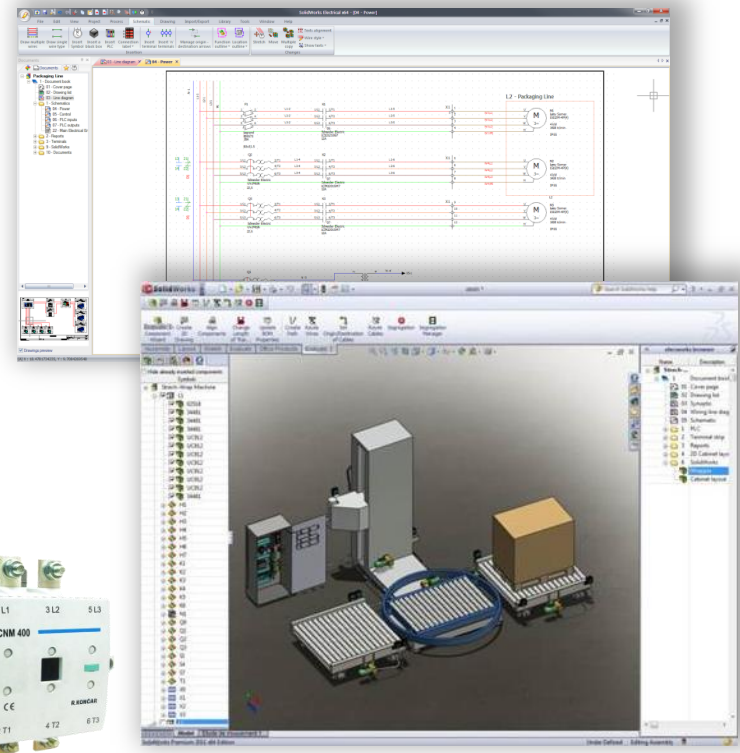


Balanced

Powerful Design Tools

Introducing SolidWorks Electrical

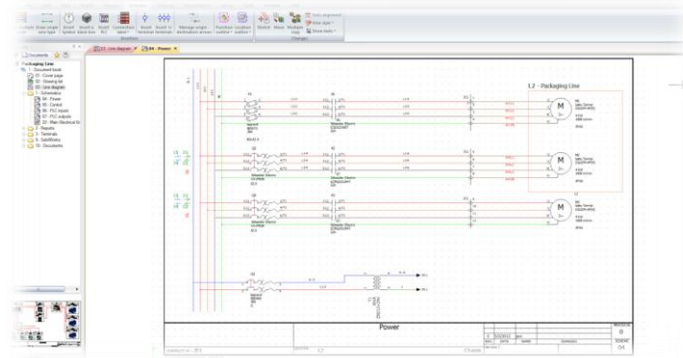
- SolidWorks Electrical
- SolidWorks Electrical 3D
- SolidWorks Electrical Professional



Powerful Design Tools

SolidWorks Electrical

- ✓ Multi-user 2D and 3D electrical design
- ✓ Bi-directional, real-time synching of design changes between 2D schematic & 3D model
- ✓ Enables one BOM for electrical and mechanical
- ✓ Automated 3D wire, cable and harness design

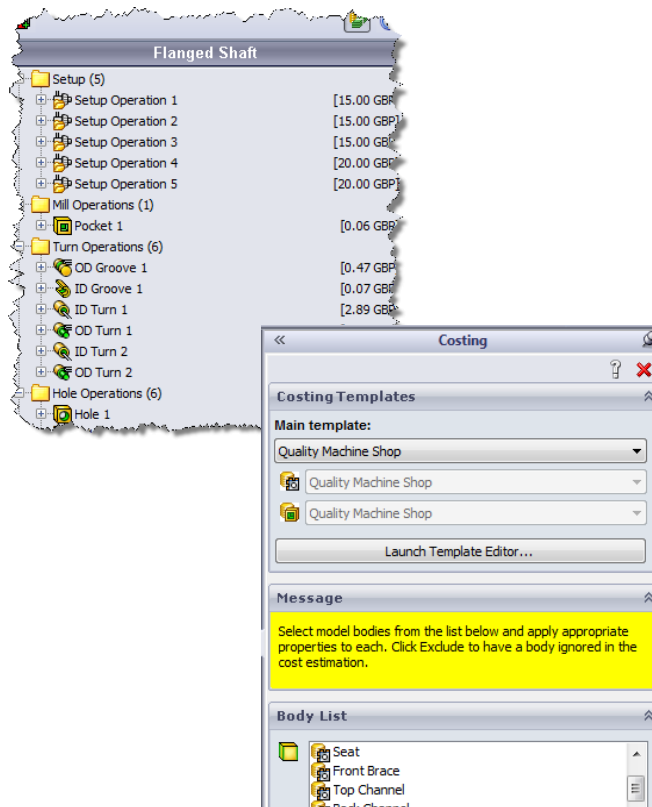


Powerful Design Tools

SolidWorks Costing

- Design for cost
- Compare suppliers, materials and design
- Repeatable quotations

- ✓ Multibody Parts
- ✓ Turned Components
- ✓ Machining sequence setup costs



Powerful Design Tools

SolidWorks Sustainability

- ✓ Paint finishes
- ✓ Material Financial Impact Factor
- ✓ TRACI Methodology
- ✓ Exporting results
 - ✓ Report.doc
 - ✓ Spreadsheet.csv
 - ✓ GaBi input.xml





Faster Model Creation

More Efficient 3D Models

- More intelligent tools
- Existing functionality, faster and more powerful
- New features to speed up sketches
- More powerful modelling tools
- Added convenience for common commands



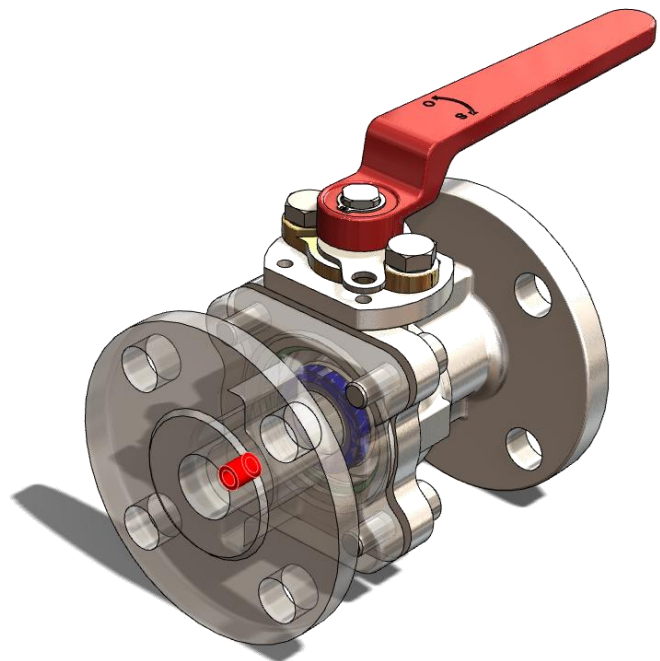
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Image courtesy of MotoCzysz

Faster Model Creation

Interference Detection

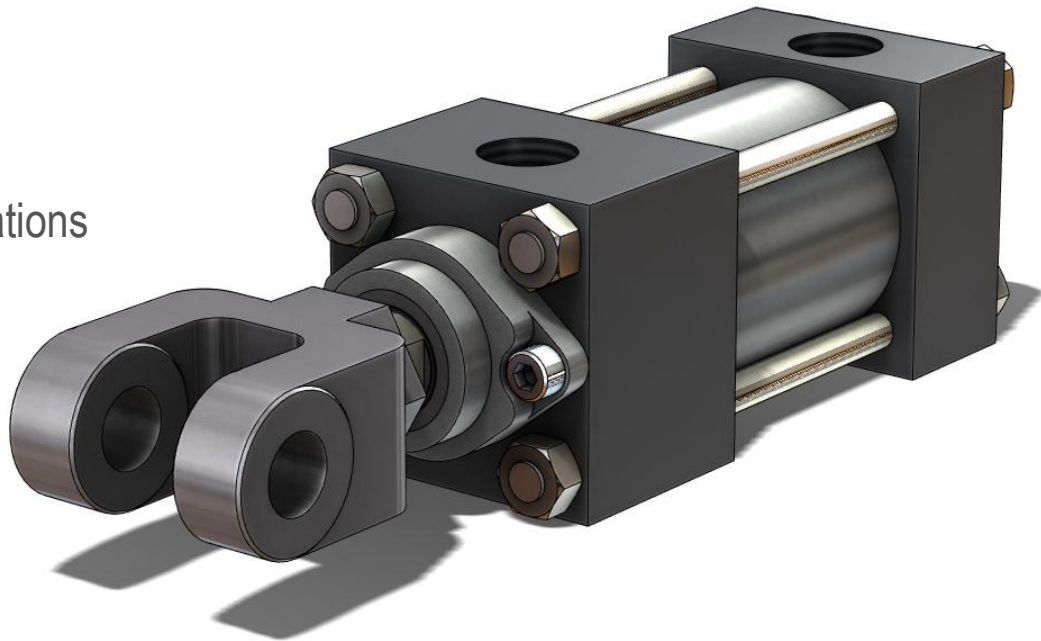
- ✓ Matching Cosmetic Threads
 - ✓ Hardware interferences with other parts not missed
 - ✓ Mismatched hole & hardware finder
- ✓ Detection results saved across sessions



Faster Model Creation

Intelligent Design Tables

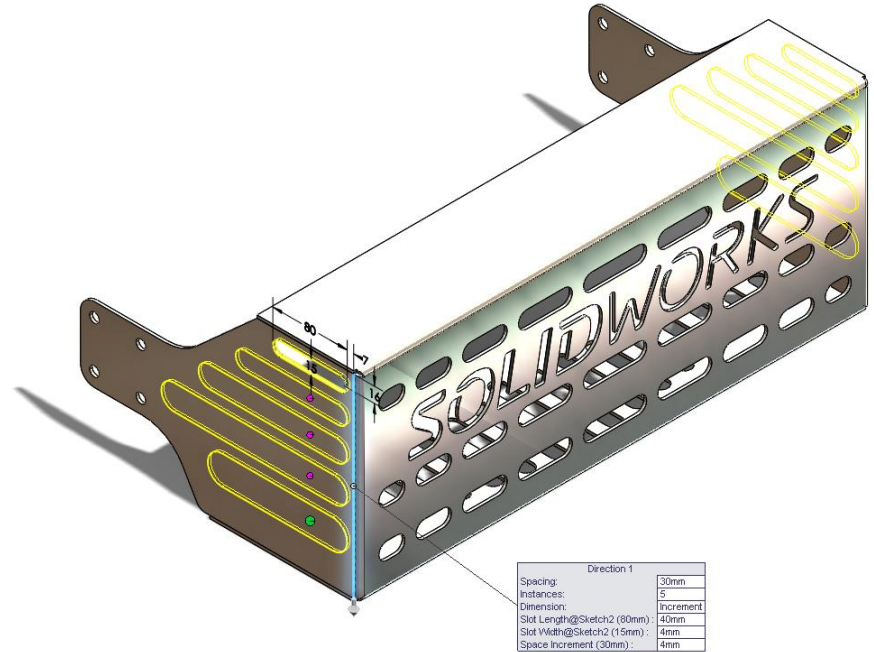
- ✓ Data Validation Drop Down boxes
- ✓ Multiple Exploded views
- ✓ Faster switching between configurations



Faster Model Creation

Varying Dimension Pattern

- ✓ New Instances to Vary option
 - ✓ Linear or Circular Patterns
 - ✓ Vary spacing and individual dimensions
 - ✓ Modify dimensions of individual instances



Faster Model Creation

Routing

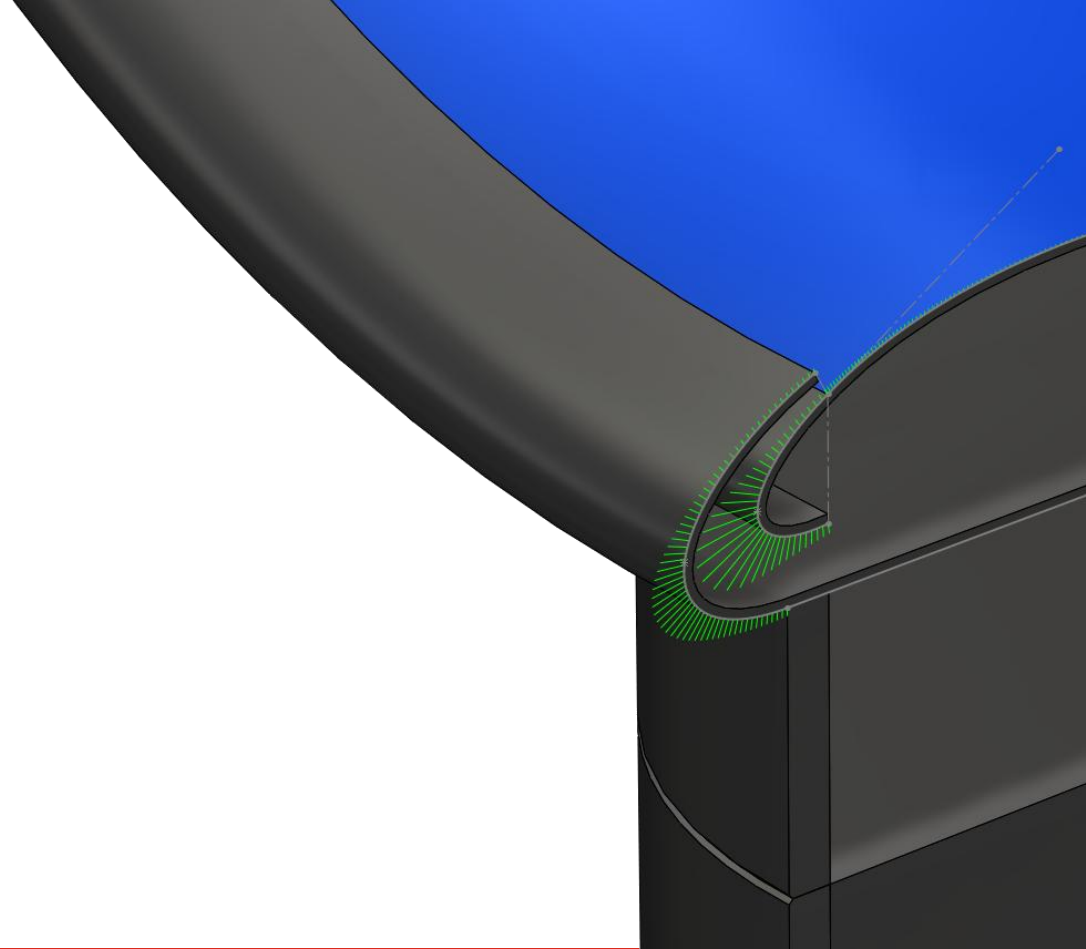
- ✓ Gravity based slopes
- ✓ Route along geometry
 - ✓ Offset from face
- ✓ P&ID for Tubing
- ✓ Automatic Tubing Drawings



Faster Model Creation

Conics

- ✓ New Sketch entity
- ✓ Improved shape control
- ✓ Easily definable Rho value



Faster Model Creation

Intersect

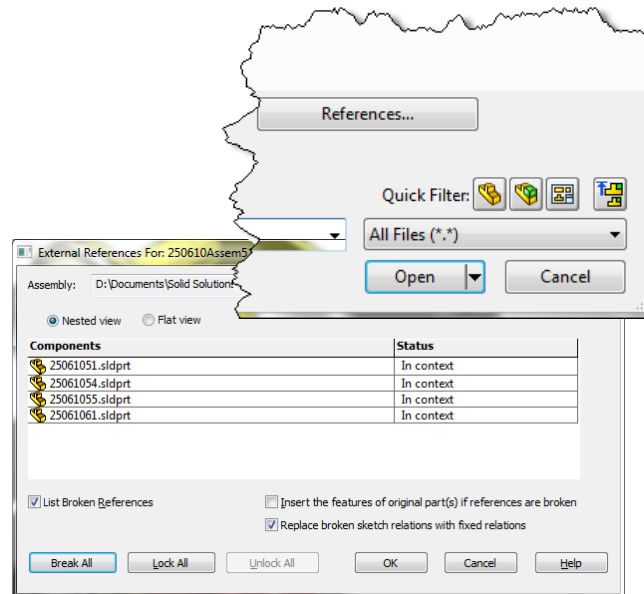
- ✓ Add and remove geometry by intersecting bodies
- ✓ Supports solids/surfaces/planes
- ✓ Single feature replaces many operations
- ✓ Many, many uses...
 - ✓ Create liquid volume



Faster Model Creation

Assembly Delighters

- ✓ File type filters on open
- ✓ Envelopes made easy
- ✓ Delete Component regardless of Subassembly
- ✓ Multiple Component insert
- ✓ Replace Component with same name
- ✓ Break External References in one go

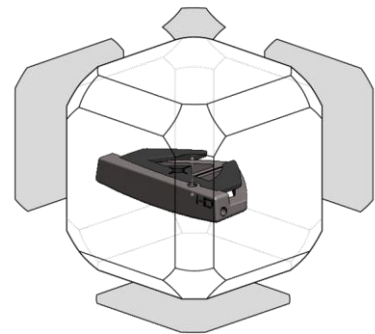


Faster Model Creation

User Experience

- ✓ Auto add dimensions when typed
- ✓ Options Search
- ✓ Sounds
- ✓ Orientation Dialogue updates
- ✓ View Cube
- ✓ Favourites folder
- ✓ Flat Feature Manager Tree
- ✓ Fillet edge selection popup in standard fillet

- ✓ Easier access to customising the shortcut bar
- ✓ Centre of Mass
- ✓ Measure enhancements





Faster Model Creation

More Efficient 3D Models

- ✓ Interference Detection
- ✓ Multiple Contour Thin Extrude
- ✓ Varying Dimension Pattern
- ✓ Routing
- ✓ Conics
- ✓ Intersect
- ✓ Assembly Delighters
- ✓ User Experience



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Image courtesy of MotoCzysz



SolidWorks 2013

What's New, Part 2
Oliver Duncan & Mark Rushton

Wednesday, 14 November 2012

SolidWorks 2013

3D Design Simplified

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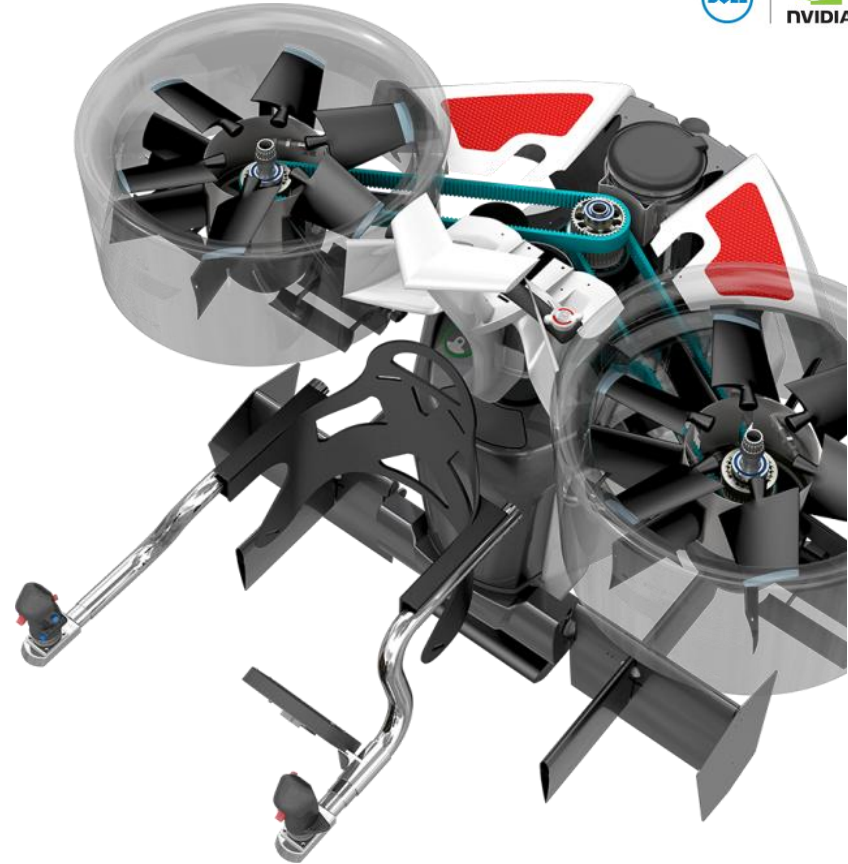


Image courtesy of Martin Aircraft Company

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Enhanced Collaboration

Wider Sharing and Increased Connectivity

- Review designs anywhere
- Easily manage projects and workflows
- Communicate technical details with clarity
- Collaborate with ease



Enhanced Collaboration

eDrawings & eDrawings Professional for iPad

- ✓ 3D – EASM, EPRT, SLDASM, SLDPRT
- ✓ 2D – EDRW, SLDDRW, DWG, DXF
- ✓ E-mail, Dropbox™, SkyDrive®, YouSendIt®, etc

- ✓ Manipulation tools
- ✓ Measure
- ✓ Markup
- ✓ Section view



Enhanced Collaboration

eDrawings Markup on SolidWorks Drawings

- ✓ eDrawings Markup in SolidWorks Drawings
- ✓ Revision Clouds



Enhanced Collaboration

Enterprise Product Data Management

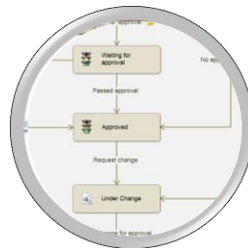
- ✓ Organised project files and folders
- ✓ Enables concurrent work on projects
- ✓ Revision control without multiple files
- ✓ Keeps a track of file history
- ✓ Increases performance of SolidWorks
- ✓ Keeps work secure with efficient backups



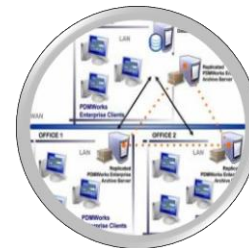
Fast Learning Curve



Powerful Search Tools



Flexible Workflow

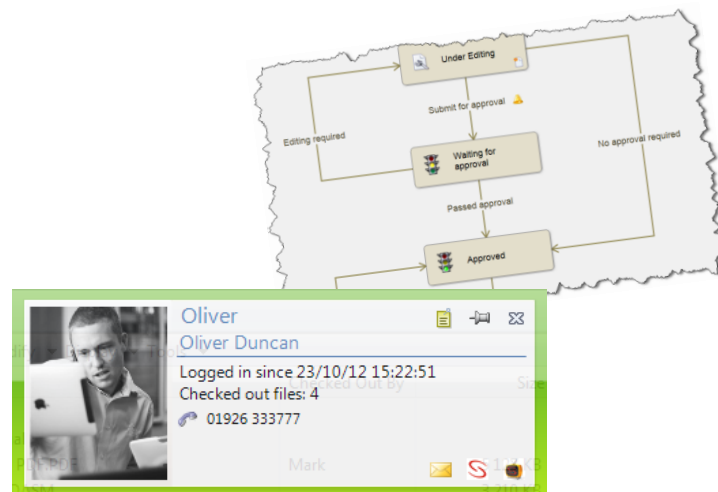


Replication

Enhanced Collaboration

Enterprise Product Data Management

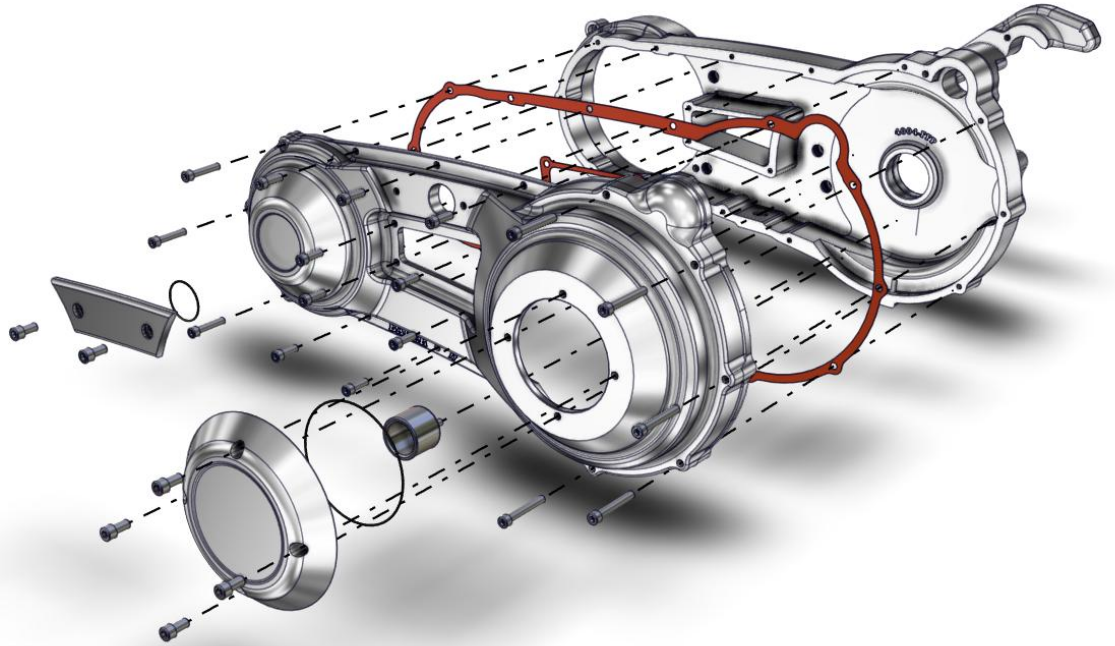
- ✓ Enhanced User Information
- ✓ Improved SolidWorks add-in
- ✓ Improved Windows Explorer ribbon
- ✓ Recently Used items in Administration
- ✓ Workflow Editor overhaul



Enhanced Collaboration

3DVIA Composer 2013

- ✓ Many performance improvements
- ✓ Align Magnet Line
- ✓ Image Library Workshop

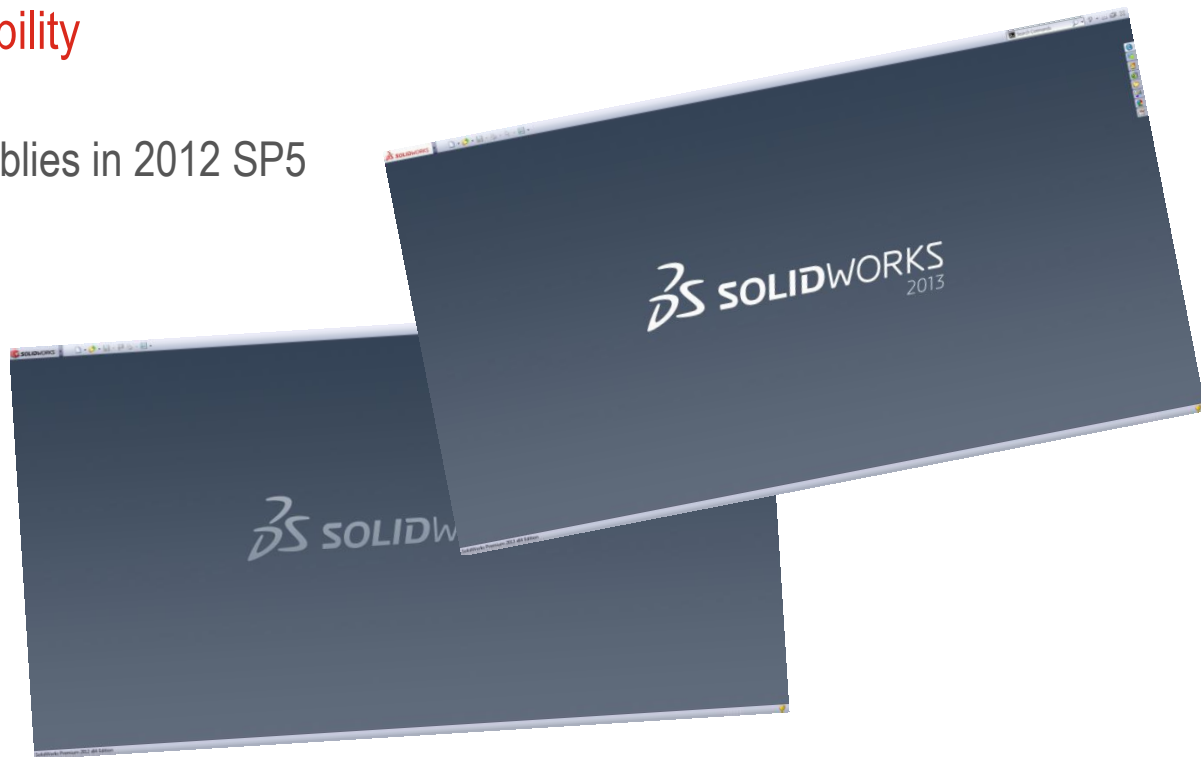


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Enhanced Collaboration

Previous Release Interoperability

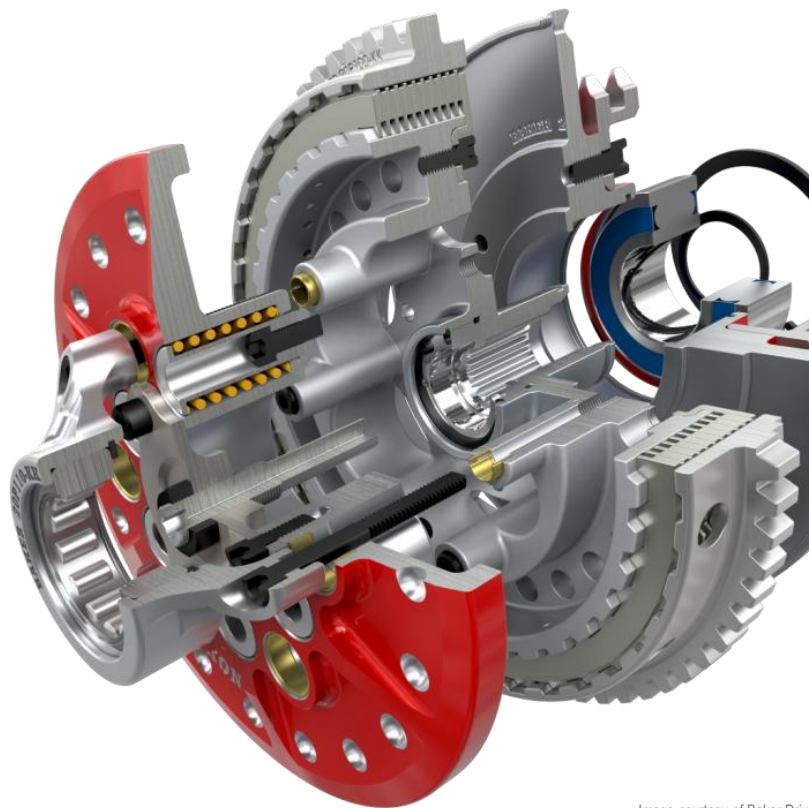
- ✓ Open 2013 Parts and Assemblies in 2012 SP5
- ✓ 2013 SP5 to open 2014 data



Improved Performance

Improved Performance and Productivity

- Validate your designs faster
- Produce better manufacturing drawings
- Create stunning images



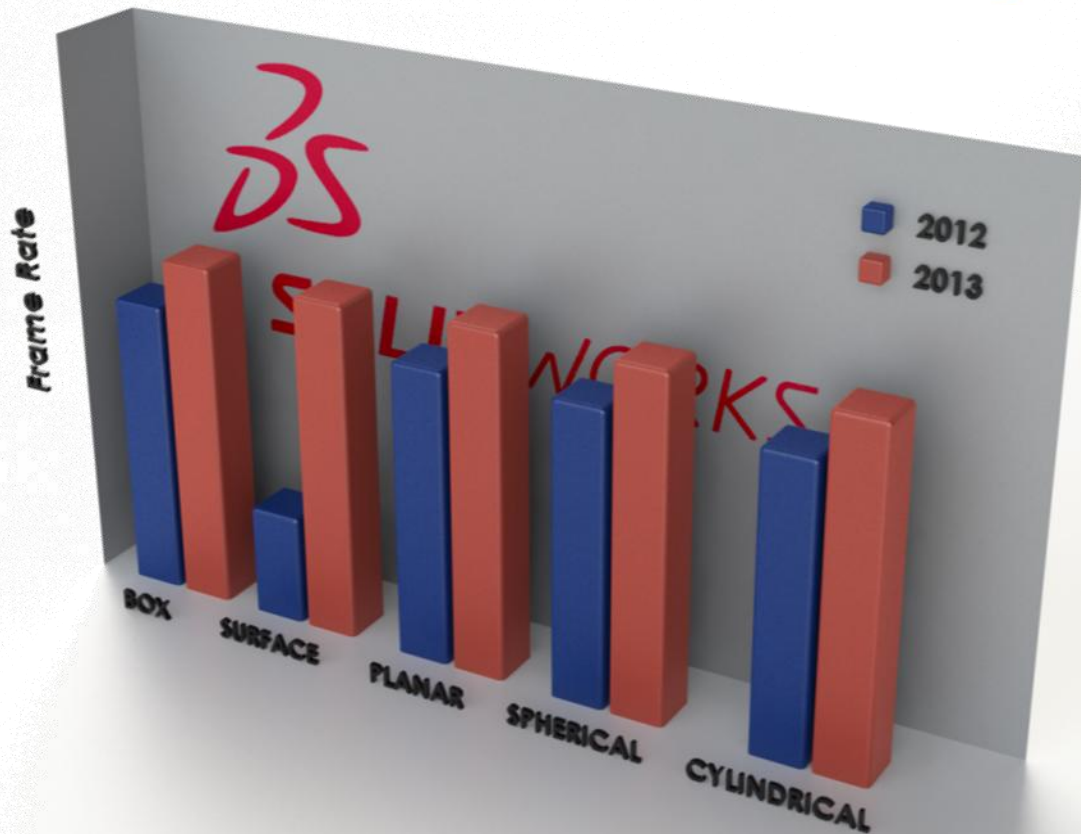
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Image courtesy of Baker Drivetrain

Improved Performance

'Under the hood'

Surface Texture Mapping
using GPU buffering



Improved Performance

'Under the hood'

RealView Response time



Improved Performance

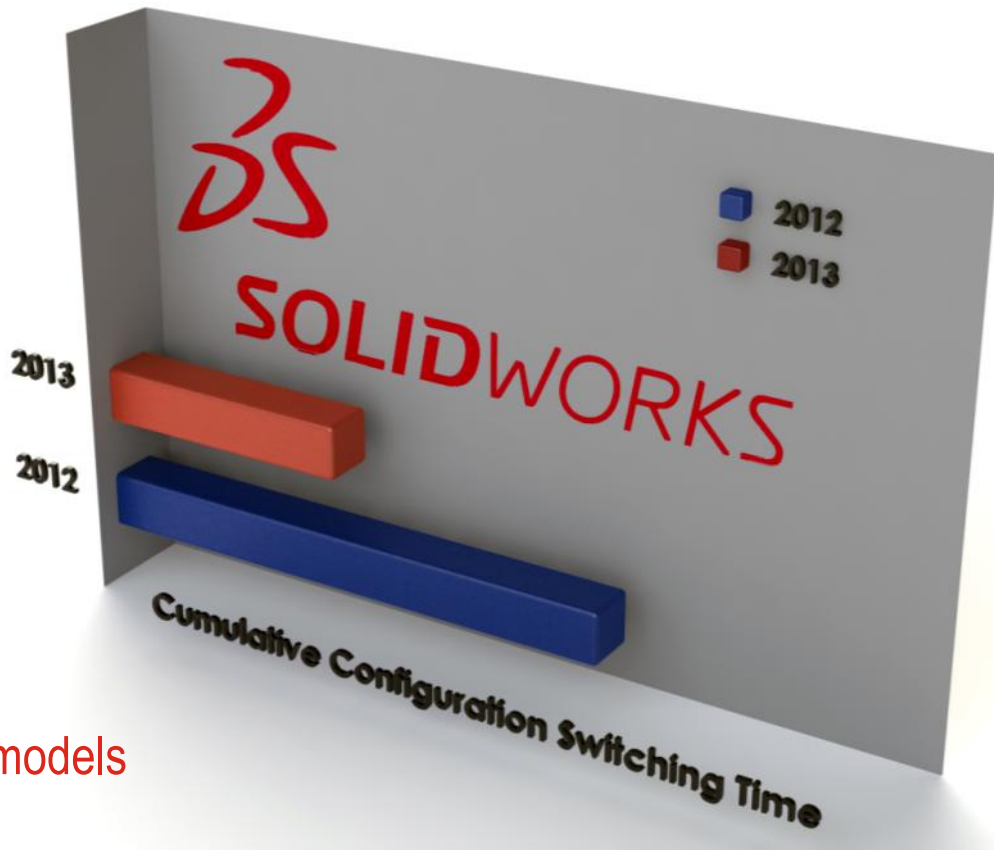
'Under the hood'

Drawing view update
Support for multi-core CPUs
(multiple background processes)



Improved Performance

'Under the hood'



Configuration Switch Time

2012: 194 sec

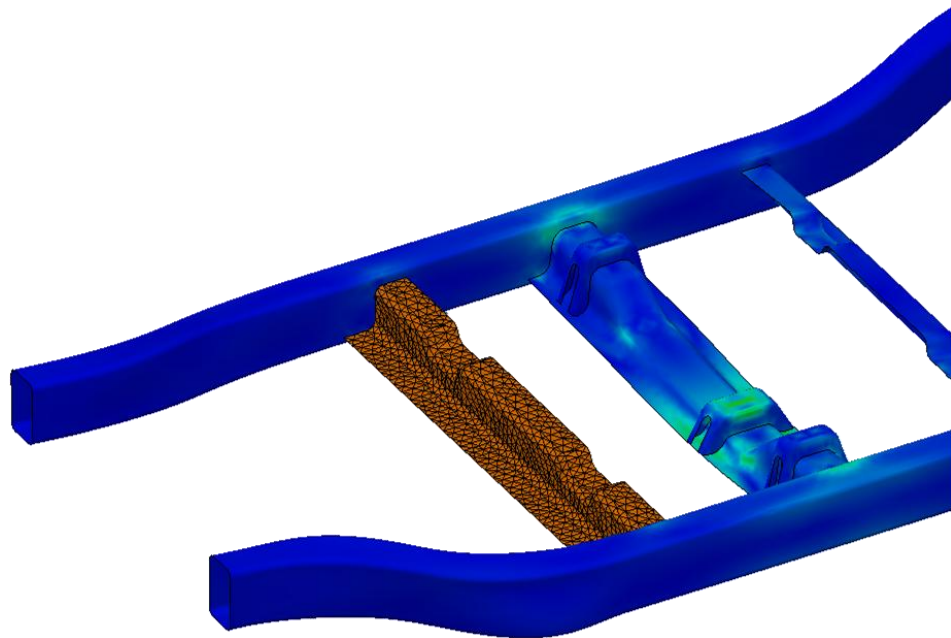
2013: 94 sec

Results totalled for 33 different models

Improved Performance

Simulation

- Ensuring designs are fit for purpose
- Reduce costs by removing material
- ✓ Automatic Surface Contact detection
- ✓ Independent component remeshing
- ✓ Sub-modelling



Improved Performance

Flow Simulation

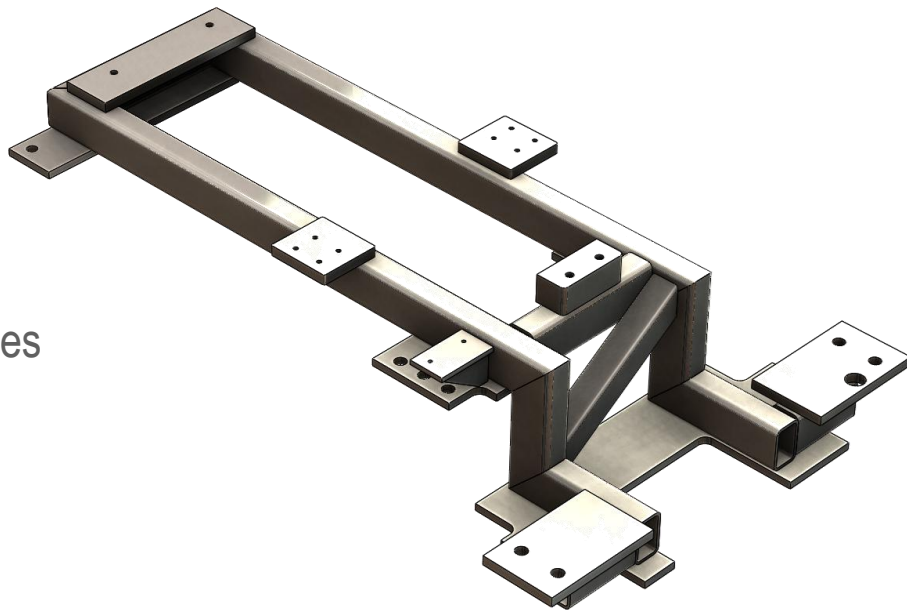
- ✓ Leakage Detection
- ✓ Local Erosion
- ✓ Steam Condensation
- ✓ Flow Streamlines



Improved Performance

Weldments

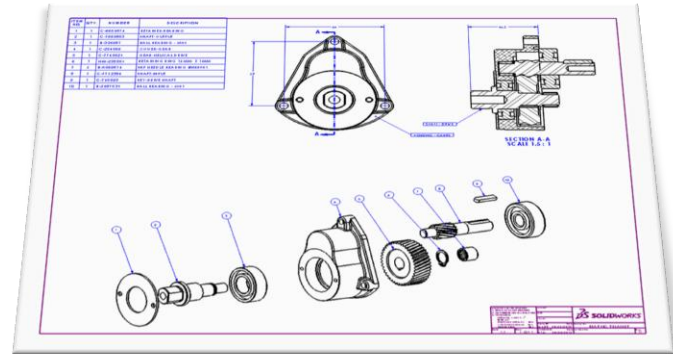
- ✓ Weldment Bounding Box
- ✓ Automatic Cut List information for non-Structural Members
- ✓ Most efficient blank size for irregular shapes



Improved Performance

Cosmetic Threads and Balloons

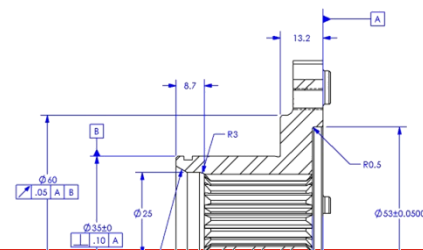
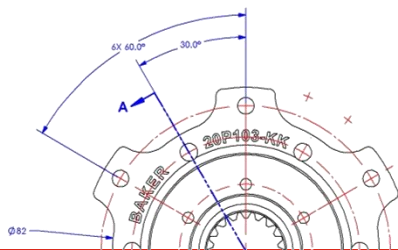
- ✓ Control over the display of Cosmetic Threads
- ✓ Resequence existing balloons



Improved Performance

Drawings

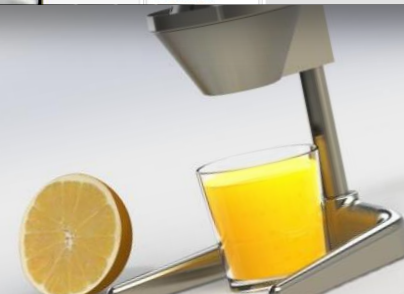
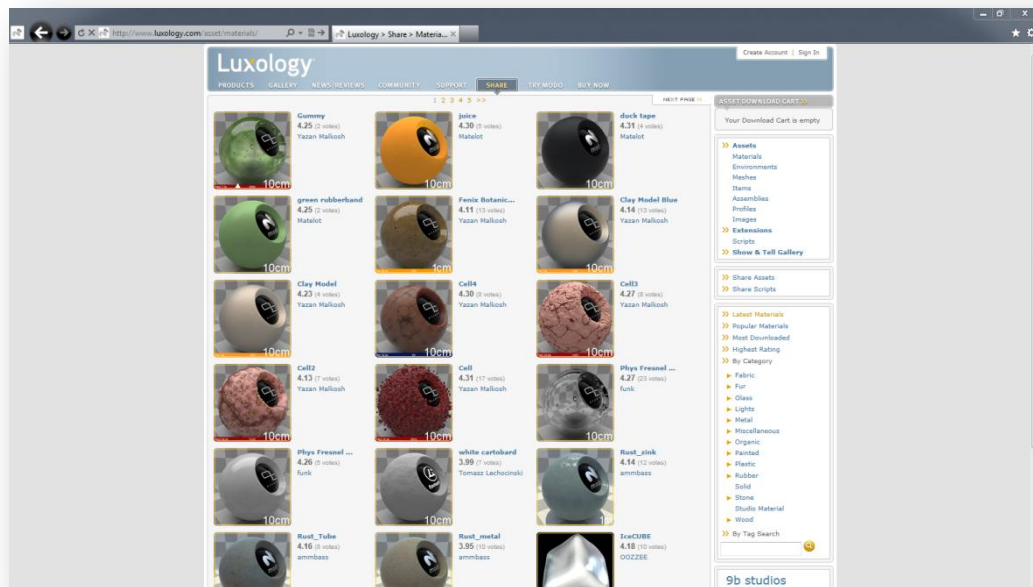
- ✓ Predefine Centreline & Centre Mark Layers
- ✓ Quick Layer access
- ✓ Link model and drawing precision
- ✓ GD&T notes
- ✓ Zoom whilst in notes
- ✓ Note Border Padding
- ✓ Automatic row height in tables
- ✓ Model Items with Tolerance import option
- ✓ Radius arrow head improvement
- ✓ Baseline Dimension enhancements
- ✓ Section View Assist



Improved Performance

Appearances and PhotoView 360

- ✓ “Do not scale textures” and decals
- ✓ Appearance filter pinning
- ✓ Copy and paste appearances
- ✓ New appearances
- ✓ Access to the Modo material library
- ✓ Network Rendering
- ✓ Custom reflection/refraction control
- ✓ New auto fillet appearance control



SolidWorks 2013

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Thank you for your time...

