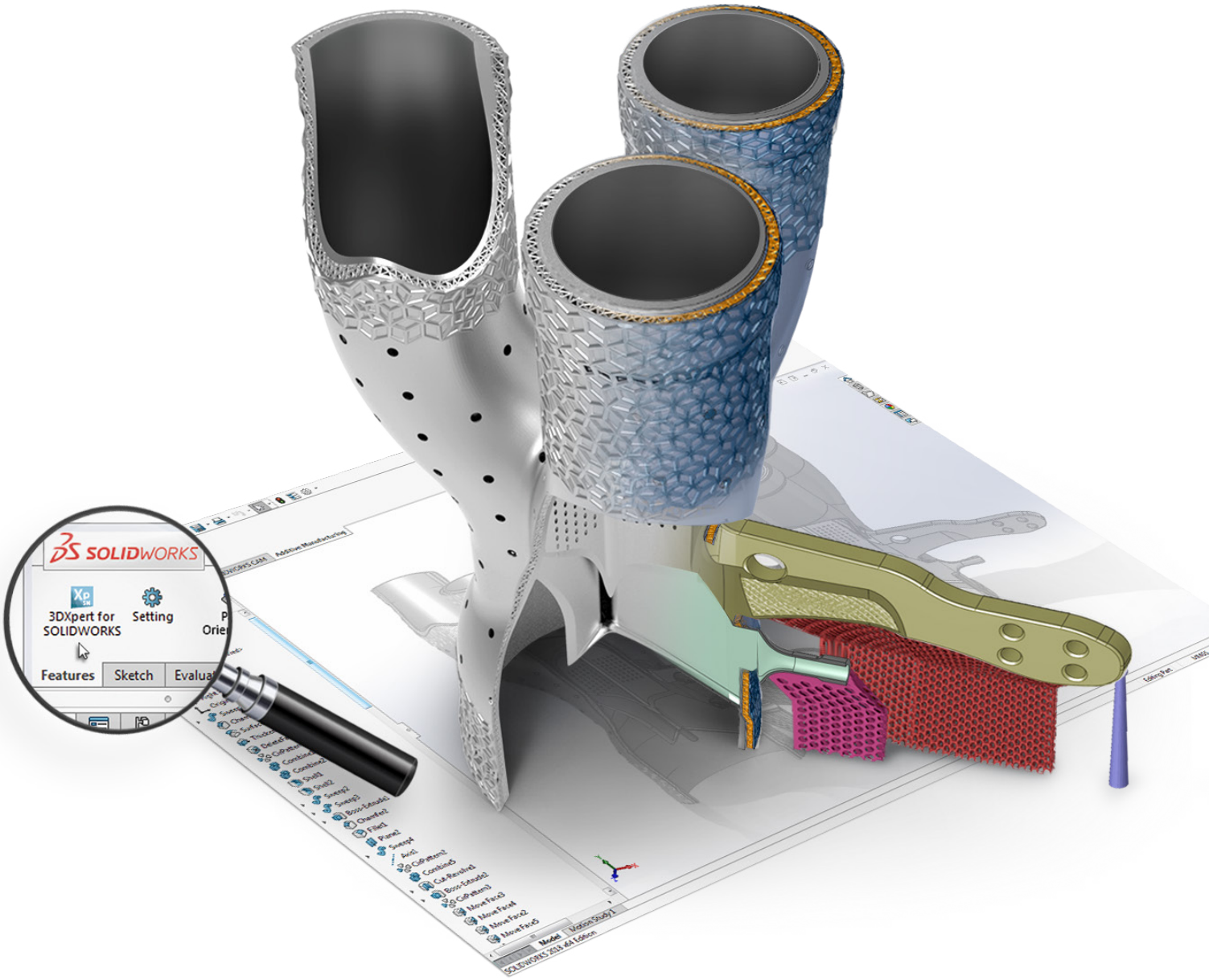
3DXpert™ for SOLIDWORKS®

Your Direct Path from SOLIDWORKS to Additive Manufacturing



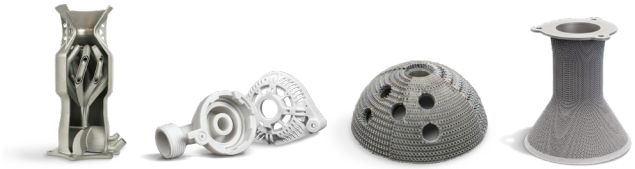
3D SYSTEMS

3DXpert™ for SOLIDWORKS®

Prepare and Optimize Your Design for Additive Manufacturing

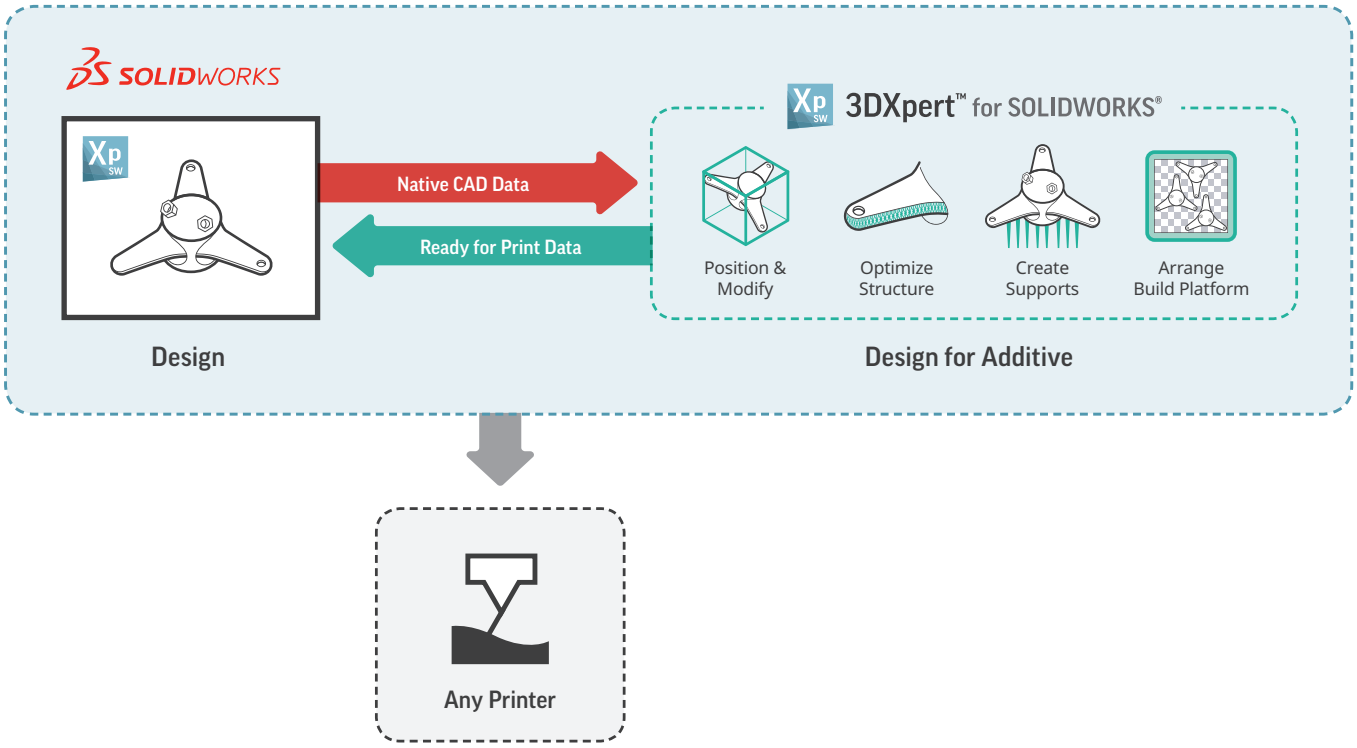
3DXpert for SOLIDWORKS is a complementary software for SOLIDWORKS, equipping designers and engineers with everything they need to prepare and optimize their designs for 3D printing. A click of a button in SOLIDWORKS brings native CAD data directly into **3DXpert for SOLIDWORKS** and provides an extensive toolset to easily analyze, prepare and optimize designs for additive manufacturing (AM). Once completed, the ready for print data can be sent to any printer or back to SOLIDWORKS.

- **A New World of Design Opportunities** – Complex geometries, part consolidation, reduced weight, enhanced functional properties, surface texturing
- **Direct Data Transfer** – click a button in SOLIDWORKS to send native CAD data to 3DXpert for SOLIDWORKS or to retrieve data that is ready for manufacturing
- **Maintain Design Integrity** – continue working with your native CAD data (both solid and mesh) without conversion and use extensive toolsets for both B-rep and mesh to improve part printability
- **Shorten Design Cycle** – easily apply changes at any stage without losing the work you have done so far
- **Lightning-Fast Structure Optimization** – unmatched speed creating, editing and viewing lattice structures while maintaining the part's exterior shape.



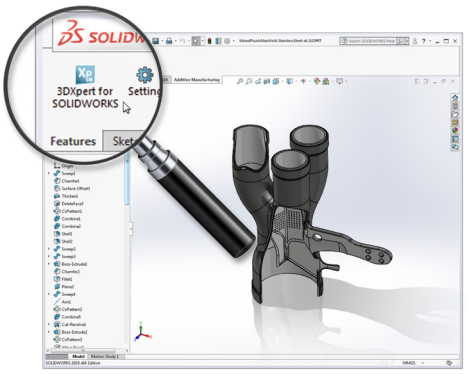
Part Consolidation | Complex Shapes | Surface Texture | Light Weighting

Design for Additive Manufacturing (DfAM) Workflow



Direct Data Transfer

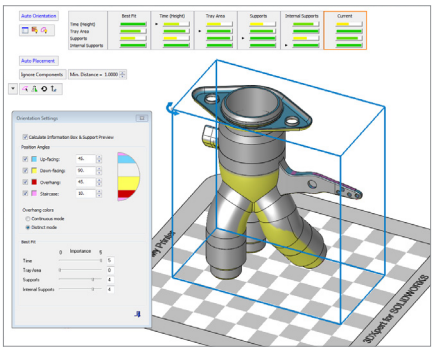
Maintain Design Integrity



- **Direct import** - click a button in SOLIDWORKS to continue working with your native CAD data (both solid and mesh) without conversion. Maintain data integrity including analytic geometry, part topology and color-coding
- **Analyze for printability** - printability checks and automated healing of both STL and B-rep geometry
- **Direct export** - click a button in SOLIDWORKS to retrieve the AM ready data from 3DXpert for SOLIDWORKS

Position & Modify

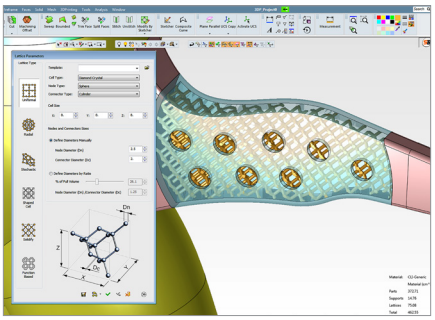
Ensure Printable Geometry



- **Automated best-fit positioning** - follow automated suggestions for part orientation that comply with predefined criteria
- **History-based hybrid modeling toolset** - use a rich set of parametric and history-based hybrid (b-rep and mesh) modeling tools to improve part printability and prepare post-processing operations
- **Facilitate ECO (Engineering Change Order)** - automatically apply all design operations performed on a previous model version to an imported, updated one
- **Shrinkage compensation** - apply scaling to compensate for part shrinkage during build

Optimize Structure

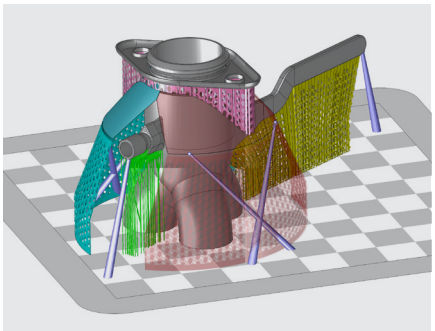
Minimize Weight & Material Usage and Apply Surface Textures



- **Lattice & infill design** - lightning-fast creation, viewing and editing of lattice and infill structures while maintaining the part's outer shape
- **Surface texture** - apply printable and conformal lattice-based textures to achieve the texture required on each surface
- **Optimize lattice structures** - adjust thickness or density based on FEA linear-stress analysis
- **Automatic adjustments** - automatically change lattice structure following changes applied through history-based parametric CAD tools

Design Supports

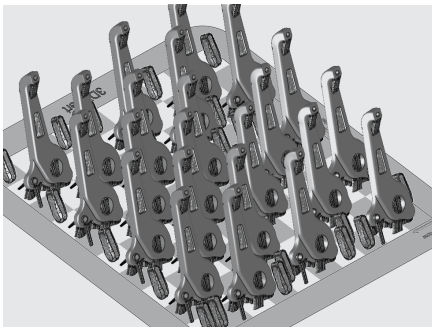
Ensure Quality Prints with Minimal Supports



- **Automatic analysis** - identify areas that require supports to prevent part distortion
- **Templates-based settings** - easily create supports of any type using material-specific best practice templates
- **Configurable design** - use a rich toolset to fragmentize, tilt, and scale supports to simplify their removal and minimize material usage

Arrange Build Plate & Export

Best Utilization of Tray Area and Printer Time



- **Position and nest** - automatic 2D and 3D nesting and tray setup to minimize printing time and optimize part arrangement on the build plate
- **View & inspect** - view your slicing results to ensure correct definitions
- **Estimate** – on-screen, real-time material and print time estimation, including custom based 3D PDF reports
- **Export** – export or send files to print as generic CAD formats (STEP, Parasolid, etc.), STL, 3MF or slicing data

Which 3DXpert for SOLIDWORKS is Right for You?

To make sure you get the most out of 3DXpert for SOLIDWORKS, different software editions are available to choose from:

FEATURES	STANDARD	PROFESSIONAL	EDUCATIONAL (*)
Direct data transfer from / to SOLIDWORKS	✔	✔	✔
Read native SOLIDWORKS and many other standard data formats (e.g. STL, STEP, IGES, 3MF)	✔	✔	✔
Printability checks	✔	✔	✔
Print time and material usage estimation	✔	✔	✔
Orientation and positioning for print including orientation optimization	✔	✔	✔
Mend and prepare part geometry using direct modeling and mesh tools	✔	✔	✔
Automated implementation of geometrical changes (ECO)	✔	✔	✔
Automated templates-based supports design	✔	✔	✔
Standard volume & surface lattice	✔	✔	✔
Standard Infill	✔	✔	✔
Split large parts and create joints for post printing assembly (Joint-Cut)	✔	✔	✔
Text / Barcode / QR code labeling	✔	✔	✔
2D/3D arrangement of parts on the tray	✔	✔	✔
Export as generic CAD (Parasolid, STEP, VRML etc.), STL, 3MF, 3D PDF or slicing data (CLI, SLC)	✔	✔	✔
Professional lattice and infill design suite	**Add-On 1:** Professional Lattice	✔	✔
Advanced development suite for lattice structures including user defined lattice and FEA-based lattice analysis & optimization	**Add-On 2:** Advanced Lattice	**Add-On 2:** Advanced Lattice	✔
Simulate to detect build failures before sending to print	**Add-On 3:** Build Simulation Pro	**Add-On 3:** Build Simulation Pro	✔
Geometrical-based residual stress analysis orientation optimization	-	✔	✔
Complete solid & surface parametric CAD toolset	-	✔	✔
Assign multiple printing technologies and multiple layer thicknesses per zone (3D Zoning)	-	✔	✔
Create protective crate around parts you wish to keep together (sinter box)	-	✔	✔

(*) Educational Edition is to be used exclusively in academic institutes and may not be used for commercial or other for-profit purposes.

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3D SYSTEMS

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