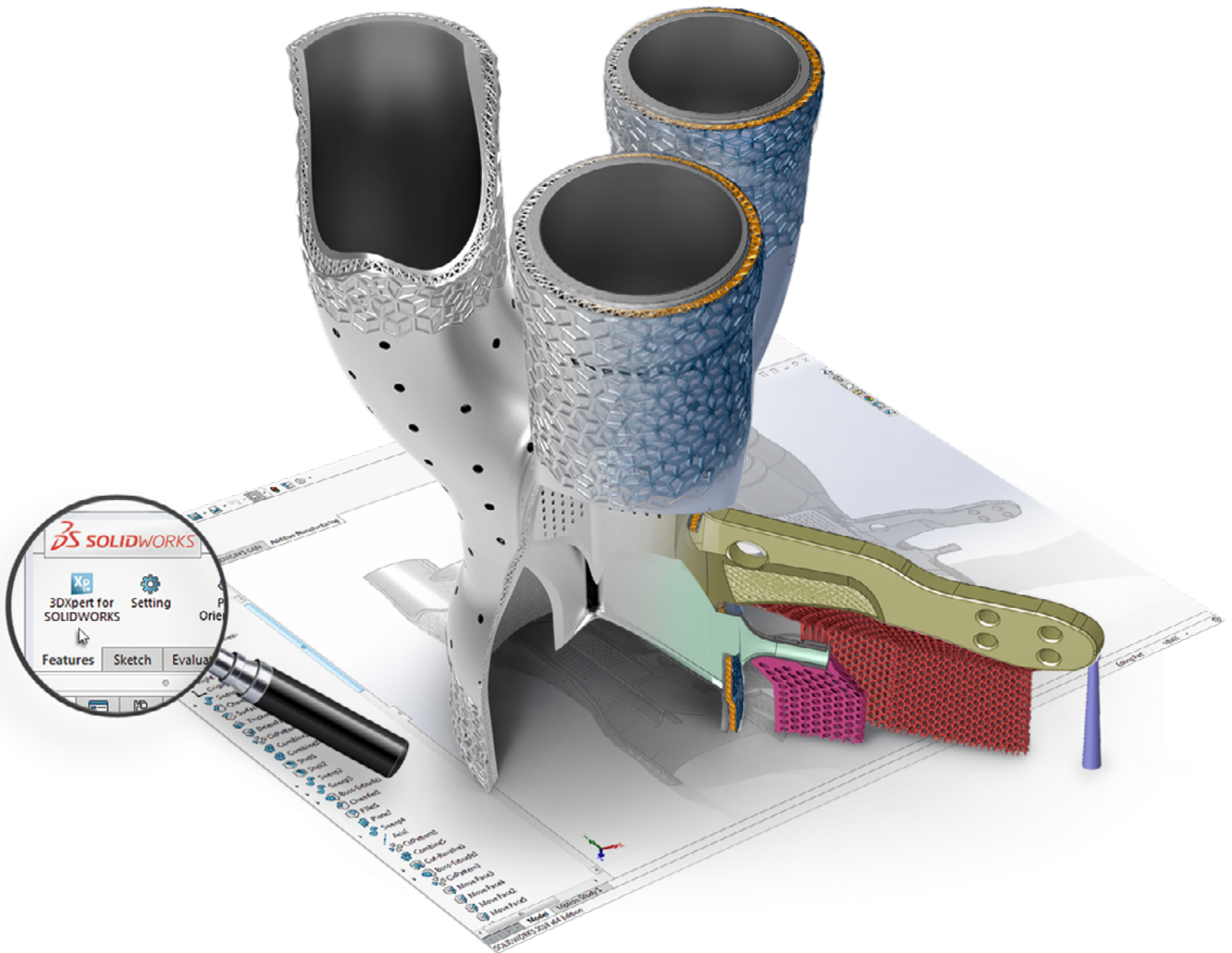




# 3DXpert™ for SOLIDWORKS®

## Your Direct Path from SOLIDWORKS to Additive Manufacturing



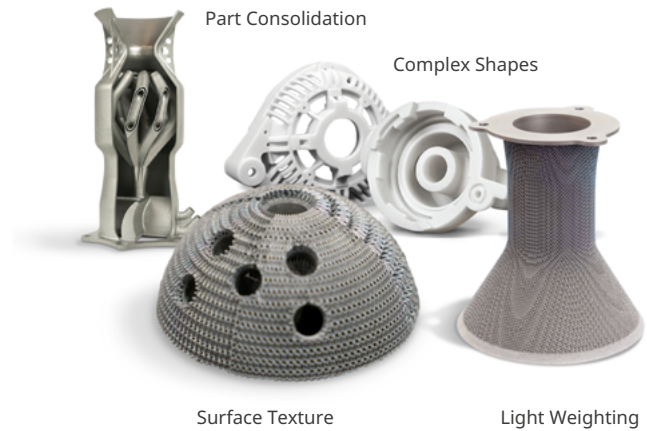


# 3DXpert™ for SOLIDWORKS®

## Additive Manufacturing

### A New World of Opportunities

Additive manufacturing opens a new world of opportunities for 3D designers. Producing complex geometries, achieving lighter weight parts without compromising on strength and applying surface textures are only some of the benefits additive manufacturing introduces. Awareness of additive manufacturing's capabilities allows your innovation to lead the way without being held back by traditional manufacturing constraints.



## From 3D Design to Additive Manufacturing

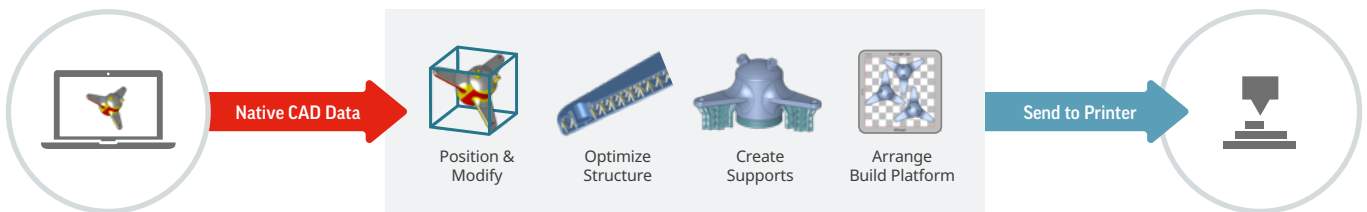
### Please Mind the Gap

Getting additive manufacturing right and enjoying all its benefits has historically required a cumbersome back and forth iterative process. An original SOLIDWORKS design must first be converted to an STL file for an preparation software to start its operation. This results in an error-prone file structure and degraded geometry that doesn't maintain the integrity of your native CAD data. In most cases, the preparation software lacks the tools to apply all identified modifications, which requires going back to SOLIDWORKS to apply the changes. This process then starts over from the beginning and repeats itself for every change that needs to be applied to the design.

## 3DXpert for SOLIDWORKS

### Bridging the Gap

**3DXpert for SOLIDWORKS** is a complementary software for SOLIDWORKS, equipping designers and engineers with everything you need to prepare and optimize your designs for 3D printing. **A click of a button in SOLIDWORKS** brings your native CAD data directly into **3DXpert for SOLIDWORKS** and provides an extensive toolset to easily analyze, prepare and optimize your design for additive manufacturing. As a single software solution, **3DXpert for SOLIDWORKS** provides a direct path from your SOLIDWORKS design to additive manufacturing and eliminates the need for a back and forth iterative process.



Design

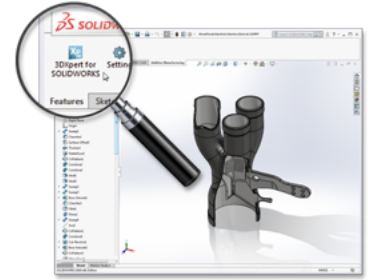
Prepare and Optimize

Print

# Native Data Transfer

## Maintain Design Integrity

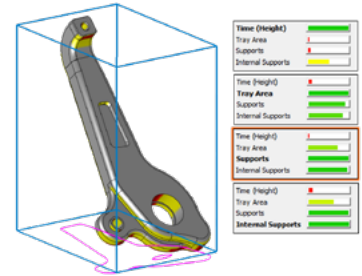
- **Native CAD** - click a button in SOLIDWORKS to continue working with your native CAD data (both solid and mesh) without conversion. Maintain data integrity including analytic geometry, part topology and color-coding
- **Automatic healing** of both STL and B-rep (solids and surfaces) geometry when required



# Position & Modify

## Ensure Printable Geometry

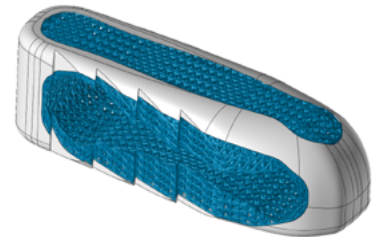
- **Automated best fit** - minimize printing time, supports and tray area usage
- **Shrinkage compensation** - apply scaling to compensate for part shrinkage during build
- **Hybrid CAD** - use direct modeling, parametric and history-based hybrid (B-rep and mesh) CAD tools to improve part printability



# Optimize Structure

## Minimize Weight & Material Usage and Apply Surface Textures

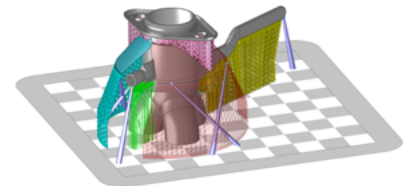
- **Lattice & infill design** - lightning-fast creation, viewing and editing of lattice and infill structures while maintaining part strength
- **Surface texture** - apply printable and conformal lattice-based textures to achieve the required texture on each surface
- **Optimize lattice structures** - 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

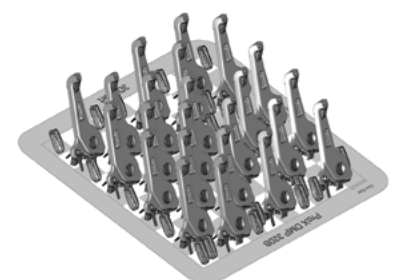
- **Automatic analysis** - identify areas requiring supports to prevent part distortion
- **Automatic settings** - easily create supports of any type (wall, lattice, solid, solid wall, cone and skirt) using material-specific best practice templates
- **Configurable design** - use a rich toolset to fragmentize, tilt, and scale supports to simplify their removal and minimize material usage



# Arrange Build Plate & Send to Print

## Best Utilization of Tray Area and Printer Time

- **Position and nest** - automatic 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** - send to printer as native CAD format (STEP, Parasolid, etc.), STL, 3MF or CLI 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 EDITION	PRO EDITION
Import native SOLIDWORKS and many other standard data formats	✓	✓
Best-fit print orientation and analysis	✓	✓
Mend and prepare using direct modeling tools	✓	✓
Standard volume & surface lattice design suite *	✓	✓
Automated templates-based supports design	✓	✓
Printability checks	✓	✓
Export to 3D PDF reports	✓	✓
Print time and material usage estimation	✓	✓
Build platform (tray) arrangements	✓	✓
Send to printer as: native CAD format (STEP, Parasolid, etc.), STL, 3MF or CLI slicing data	✓	✓
Advanced volume lattice design suite for light weighting		✓
Conformal volume infills	Add-On 1: Advanced Lattice Design	✓
Advanced surface based lattice (texture)		✓
FEA-based lattice analysis	Add-On 2: Advanced Lattice Optimization	✓
Optimize the design - iterative lattice optimization based on FEA		✓
Extensive mesh (STL) toolset	Add-On 3: Advanced Part Preparation	✓
Basic manual creation of support areas		✓
Complete CAD toolset	-	✓
Analyze and edit supports areas	-	✓
Complete design, control and management of supports	-	✓
Geometrical-based residual stress analysis	-	✓
Assign multiple printing technologies (based on patent pending 3D Zoning technique)	-	✓
Slice for multiple layer thicknesses	-	✓

\* Fully functional standard lattice design suite.

The advanced lattice design suite is also available for evaluation purposes but the design cannot be exported & sliced.



**Download NOW 3DXpert for SOLIDWORKS**

<https://www.3dsystems.com/3DXpert4SW>

- 3DXpert for SOLIDWORKS is available exclusively for SOLIDWORKS 3D CAD subscribers and the Standard Edition can be downloaded at no extra cost.
- For add-ons to the Standard Edition or for the Pro Edition, please contact your SOLIDWORKS reseller.



Find out more at: <https://www.3dsystems.com/3DXpert4SW>

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