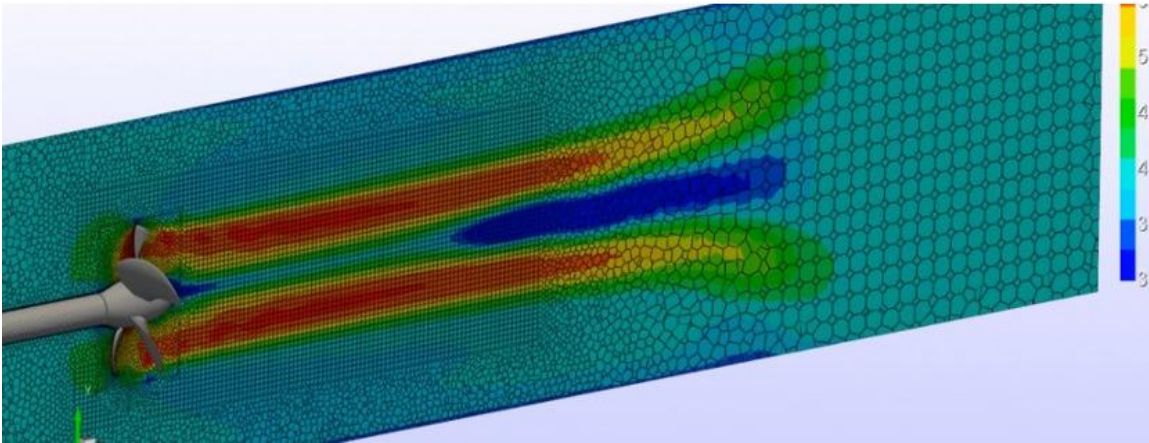


Ennova CFD 1.11.2 Release Notes



Overview

Ennova CFD 1.11.2 is a maintenance and enhancement release focused on improving geometry repair, polyhedral meshing, solver workflows, visualization, and overall application robustness.

The release includes significant improvements driven by customer feedback and internal development, resulting in improved workflow efficiency, mesh quality, and application stability across both Windows and Linux platforms.

Area	Highlights
Geometry Repair	Improved CAD repair and topology operations
Meshing	Significant improvements in mesh quality and robustness
BlueCFD	New native Microsoft Windows OpenFOAM support
Kestrel CFD	New support for Kestrel (CREATE™-AV) workflows
OpenFOAM	Enhanced workflows for OpenFOAM Foundation and OpenCFD / Keysight Technologies
Boundary Layers	Enhanced prism layer generation
Visualization	Improved graphics and usability
Performance	Improved stability and workflow efficiency

Major Improvements

Geometry Repair Enhancements

Version 1.11.2 introduces significant improvements to geometry preparation and repair, increasing robustness when working with complex production CAD models.

- Improved robustness of Stitch and Intersect operations for complex surface models.
- Enhanced surface intersection generation, reducing failures when creating intersections between adjacent surfaces.
- Improved handling of small surface translations during geometry repair workflows.
- Increased reliability when repairing imported CAD containing gaps, overlaps, and topology inconsistencies.
- Improved preservation of geometry during repeated Stitch and Intersect operations.
- Enhanced ShrinkWrap stability for challenging feature-angle configurations.
- Improved handling of trimmed and intersecting surfaces.
- General improvements to geometry editing and repair workflows.

These enhancements reduce manual CAD cleanup while improving the reliability of downstream mesh generation.

Meshing Enhancements

Version 1.11.2 includes significant improvements to Ennova's conformal polyhedral meshing technology.

- Improved handling of periodic boundary meshing.
- Enhanced prism layer generation for complex geometries.
- Improved mesh transition quality between refinement regions.
- Increased robustness of tetrahedral volume mesh generation used during polyhedral mesh creation.
- Improved proximity-based refinement around geometric features.
- Better control of mesh growth, reducing excessive mesh generation in challenging models.
- Improved dualization near folded surfaces for higher-quality polyhedral meshes.
- Reduced interaction between prism-layer settings and downstream polyhedral mesh generation.

These enhancements provide more reliable, production-quality meshes while improving workflow efficiency for demanding industrial CFD applications.

Solver Workflow Enhancements

New BlueCFD Support (Native Microsoft Windows)

Version 1.11.2 introduces support for BlueCFD, enabling engineers to prepare, configure, and execute OpenFOAM workflows entirely within a native Microsoft Windows environment.

- Native Windows OpenFOAM workflow without Linux or Windows Subsystem for Linux (WSL).
- Improved mesh export and case generation.
- Streamlined solver setup and preprocessing.
- Compatibility with existing OpenFOAM workflows.
- Seamless integration with Ennova's geometry repair and conformal polyhedral meshing technologies.

This new capability provides organizations with a professional Windows-native OpenFOAM environment while maintaining compatibility with Linux-based OpenFOAM deployments.

New Kestrel (CREATE™-AV) Support

Ennova CFD 1.11.2 adds support for Kestrel workflows, including:

- Mesh export.
- Boundary-condition mapping.
- Solver preprocessing.
- Streamlined generation of high-quality meshes for U.S. Department of Defense aerodynamic simulations.

The new Kestrel workflow integrates directly with Ennova's geometry repair and conformal polyhedral meshing capabilities, providing an efficient preprocessing solution for aerospace applications.

Enhanced OpenFOAM Workflow Support

Version 1.11.2 also includes workflow enhancements for supported OpenFOAM distributions, including:

- OpenFOAM Foundation
- OpenCFD / Keysight Technologies
- Improved project setup.
- Enhanced export workflow.
- Improved preprocessing.
- Better boundary-condition assignment.
- Improved compatibility with current releases.

Release Summary

Improvements by Functional Area

Functional Area	Status
Geometry Repair	Significant Improvements
Polyhedral Meshing	Significant Improvements
Boundary Layer Meshing	Improved
Solver Workflows	Improved
Visualization	Improved
User Interface	Improved
Performance	Improved
Stability	Improved

Issue Resolution

Version 11.2 resolves more than 180 issues identified through customer feedback, production use, and ongoing development.

- Geometry repair and CAD preparation
- Polyhedral meshing
- Boundary layer generation
- Solver workflow enhancements
- Visualization
- User interface improvements
- Performance and stability

Contact Information

Ennova CFD

www.ennova-cfd.com

info@ennova-cfd.com