

# Altair® Inspire Cast™ 2025.1

RELEASE NOTES

# NEW FEATURES

Altair Inspire Cast 2025.1 includes the following new features and enhancements.

## Insulating Blanket

In investment casting, you can now apply an insulating blanket to your shell mold to slow the cooling rate in targeted areas. This helps prevent specific sections of the part from solidifying too quickly, improving overall casting quality.

For details on this update, see the [Define Gravity Parameters](#) section of the [Gravity Process](#) page in the help.

# ENHANCEMENTS

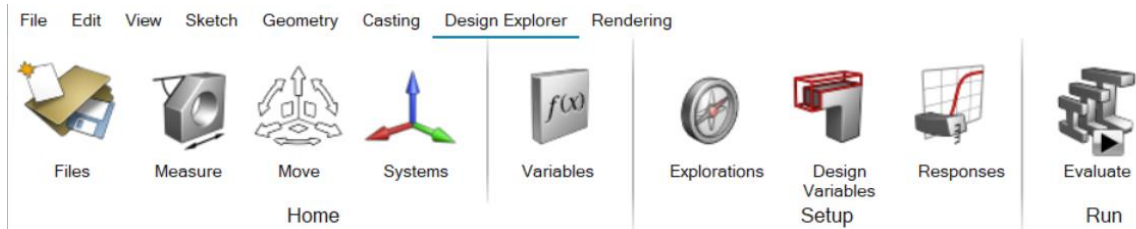
## Auto Report Tool



You can now automatically generate reports based on casting analysis runs. This is helpful for quickly and easily sharing technical information about your model.

For details on this update, see [Report](#) in the help.

## Design Explorer Ribbon

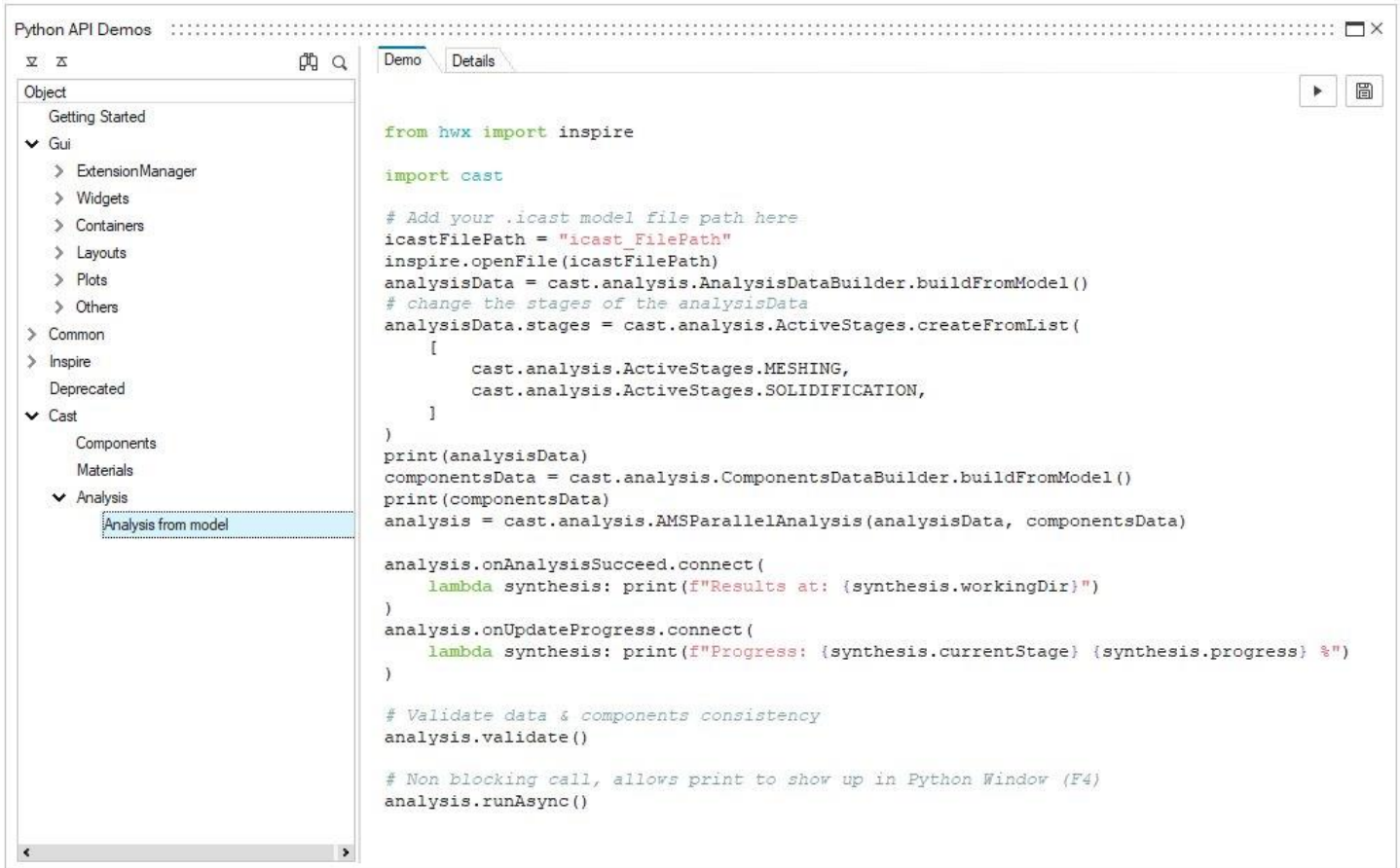


You can now evaluate the design of your casting parts by using geometric variables and applying a design-of-experiments (DOE) or optimization method. This is helpful for testing variant designs before moving forward with a physical prototype.

For details on this update, see [Design Explorer](#) in the help.

# APIs

Inspire Cast now offers a set of Python APIs that allow full control over simulation setup and execution through scripting. This enables seamless integration with external platforms like Synera, supporting automated workflows and advanced design optimization. Currently, the API allows launching thermal simulations, with additional capabilities planned for future releases.



```
Python API Demos ..... [ ] x
Object
Getting Started
  v Gui
    > ExtensionManager
    > Widgets
    > Containers
    > Layouts
    > Plots
    > Others
  > Common
  > Inspire
  Depreciated
  v Cast
    Components
    Materials
    v Analysis
      Analysis from model

Demo Details [ ] [ ]
from hwx import inspire

import cast

# Add your .icast model file path here
icastFilePath = "icast_FilePath"
inspire.openFile(icastFilePath)
analysisData = cast.analysis.AnalysisDataBuilder.buildFromModel()
# change the stages of the analysisData
analysisData.stages = cast.analysis.ActiveStages.createFromList(
    [
        cast.analysis.ActiveStages.MESHING,
        cast.analysis.ActiveStages.SOLIDIFICATION,
    ]
)
print(analysisData)
componentsData = cast.analysis.ComponentsDataBuilder.buildFromModel()
print(componentsData)
analysis = cast.analysis.AMSParallelAnalysis(analysisData, componentsData)

analysis.onAnalysisSucceed.connect(
    lambda synthesis: print(f"Results at: {synthesis.workingDir}")
)
analysis.onUpdateProgress.connect(
    lambda synthesis: print(f"Progress: {synthesis.currentStage} {synthesis.progress} %")
)

# Validate data & components consistency
analysis.validate()

# Non blocking call, allows print to show up in Python Window (F4)
analysis.runAsync()
```

## Additional Changes and Enhancements for 2025.1

- Saved files (\*.icast) now include materials data to make sharing and collaboration more convenient. [INSCAST-4530]
- Filling analysis is now improved for greater accuracy. The improved result provides a more detailed and accurate representation of liquid behavior during the filling phase of the casting process. By capturing additional variables and flow dynamics, it allows for better prediction of potential defects, optimization of gating systems, and overall enhancement of casting quality. [INSCAST-4502]

- New meshing strategies have been introduced to help users address common issues when meshing liquid components, especially in cases involving poorly defined geometries. The addition of **Fuse** and **Wrap** options improves mesh robustness by simplifying complex interfaces and closing small gaps, reducing the likelihood of meshing failures, ensuring congruency between bodies' meshes, and improving simulation reliability.

The Fuse option is used to connect or merge bodies that intersect, penetrate, or have small gaps between them. It is especially useful when the geometry is not perfectly connected, such as in fluid domains or multi-body models, where slight misalignments can lead to meshing issues.

Fuse helps to:

- Close gaps
- Repair poor connections
- Create a continuous and clean mesh

This ensures that meshing proceeds without distortion or discontinuities.

The tolerance distance for filling these gaps can be adjusted in the preferences.

The **Wrap** option is useful for preventing meshing issues when connections between different liquid bodies are not well-defined. It works by enclosing multiple geometries into a single clean, watertight mesh, closing small gaps and fixing poorly connected areas.

To ensure mesh continuity and quality, the process may simplify or slightly alter fine features.

The mesh quality tolerance for the Wrap operation can be adjusted in the preferences.

[INSCAST-4212]

- Thickness tool is now more robust. [INSCAST-4505]

## KNOWN ISSUES

The following known issues will be addressed in a future release:

- As of October 14, 2025, Microsoft Windows 10 will reach its end of support. Following Microsoft's messaging, all Altair 2026 applications will no longer support Windows 10. Altair is providing this information to help our customers prepare and accommodate for this change. Altair 2026 will support the Windows 11 operating system, along with our other Linux-based operating systems. Please contact your local Altair support teams if you have any questions or concerns.