

# EnSight CFD 1.2

## and other examples of building applications on top of EnSight using the Python API

Aric Meyer  
Application Engineer, CEI

EnSight Forum  
Tokyo, Japan  
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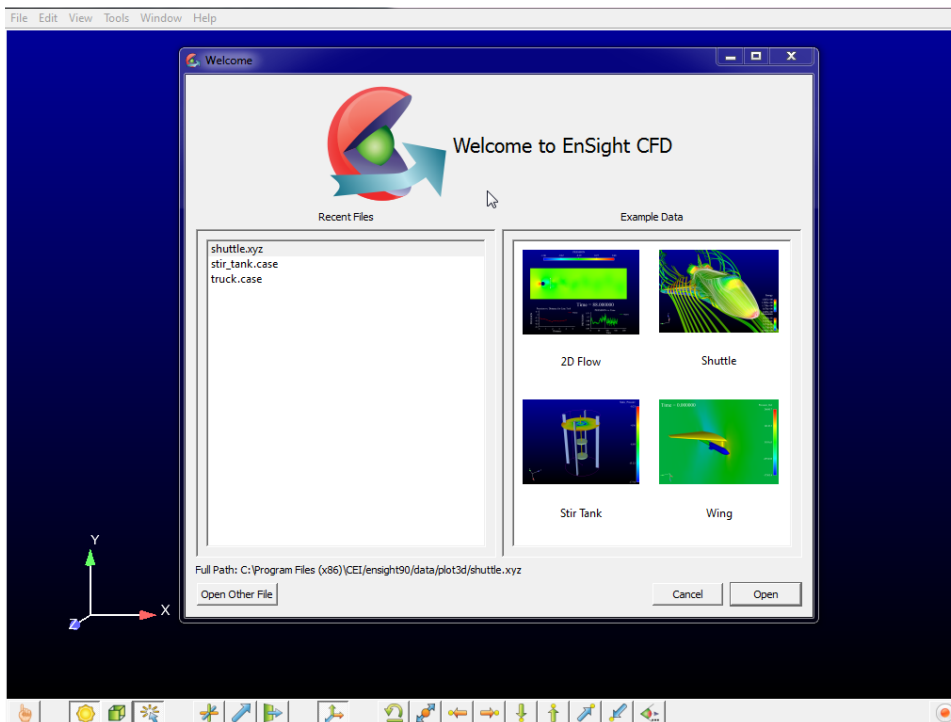
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## Intro to EnSight CFD

- ◆ Built on EnSight
- ◆ A completely new GUI made with PyQt
- ◆ Intuitive user interface
- ◆ Capabilities optimized for CFD users



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## Features

- ◆ EnSight graphics rendering
- ◆ CFD data visualization methods
  - Clip planes, streamlines, pathlines, boundary layers, surface-restricted streamlines, vortex cores, separation/attachment lines, shock surfaces
- ◆ Control of graphics display
  - Visibility, color palette, transparency, animation



International language support

## Timeline

- ◆ 1.0 – 2009年04月
- ◆ 1.1 – 2009年06月
- ◆ 1.2 – 2009年10月
- ◆ 2.0 – 2010年01月

Full Japanese translation by KGT

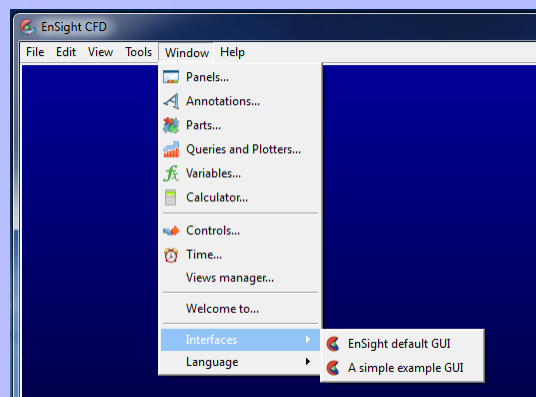
Future versions



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## EnSight CFD

- ◆ Available as a stand alone product
- ◆ Included with every EnSight 9.0 license
- ◆ Switch between products on the fly



## Development tools

- ◆ Python
  - ◆ With access given to users
- ◆ Qt – Multiplatform widget toolkit (for GUI)
- ◆ PyQt – Integrated Python and Qt

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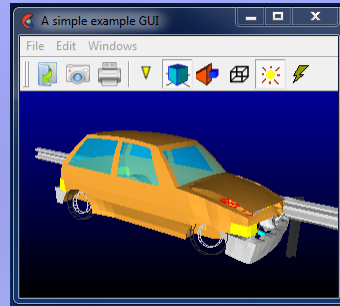
## Other uses of Python for EnSight

- ◆ Custom GUI
- ◆ Co-processing
  - ◆ script manager
- ◆ Interface with other programs in EnSight
  - ◆ Example: meshing tools from Distene
- ◆ Extensions
  - ◆ Example: skybox quick tool
- ◆ Batch mode (running EnSight without a GUI)

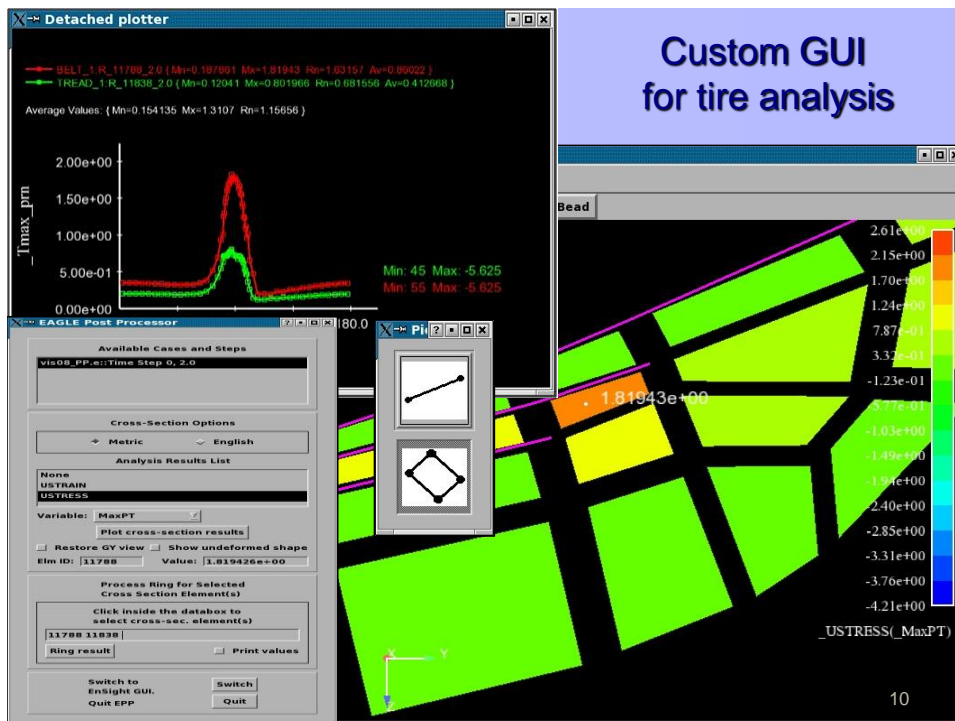
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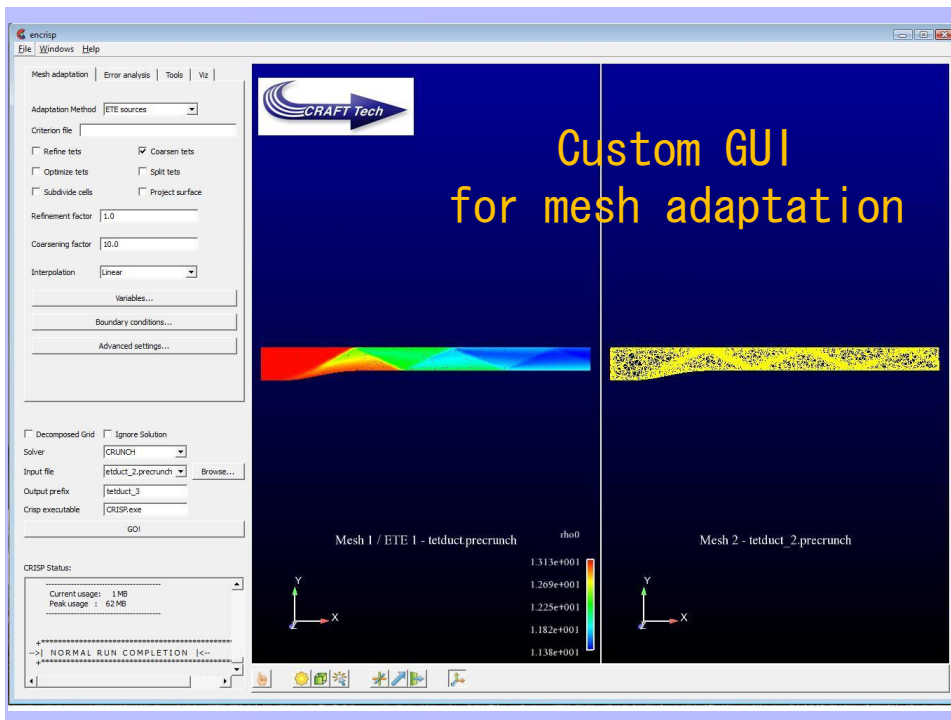
# Custom GUIs

- ◆ Made with PyQt
- ◆ Built for
  - ◆ Goodyear
  - ◆ Army Research Labs
  - ◆ Craft Tech



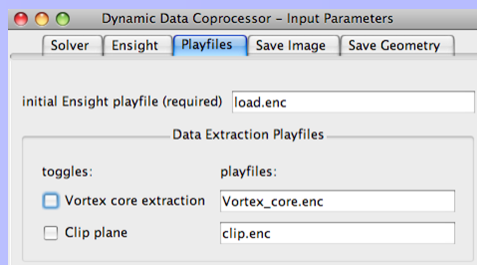
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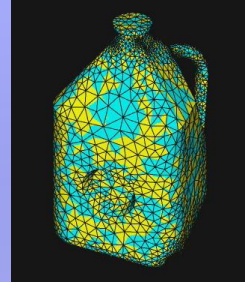
## Batch mode and Co-processing

- ◆ EnSight can execute any command language file or Python script without a GUI
- ◆ Can be used to post-process results while the solver is running



## Integrated meshing tools

- ◆ Interfaces with multiple meshers through the EnSight GUI
- ◆ Makes EnSight into a pre and post processor



[Milk jug video](#)  
from Distene  
(France)



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











## Extensions

Skybox example



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## List of current quick tools

	Message Console	Display messages from the system
	Extended CFD Variables	Extended variable list for CFD datasets
	ChromaDepth	Create a ChromaDepth image from the current view
	Query Import	Import a query from a CSV formatted text file
	Movie/Image Annotation	Import a movie or image as a rectangle annotation
	JT Export	Export the current time step to JT
	Performance Test	EnSight graphics performance tests
	Min Max	Find the min and max of the selected parts using variable they are colored by
	Timestep Sampling	Set the sampling rate based on mean, median, min, max step
	Moment and Center Pressure	Find the Moment on the selected 2D parts using Force or Force_CFD vector variable
	Net Force	Find the Net Pressure Force on the selected 2D parts using pressure variable
	Object Info	Dynamic information about the object under the cursor
	Simple Calc	A Simplified Calculator
	Skybox	Create a skybox from a cubemap image and the box tool



# Thank you

For more information

CEI: [www.ensight.com](http://www.ensight.com)

Aric Meyer: [aric@ensight.com](mailto:aric@ensight.com)

KGT: [www.kgt.co.jp](http://www.kgt.co.jp)

