

**Mass Distribution**

**Wall Thickness**

**Riser & Gate**

**Draft Angle**

**Ejection Force**

**Part Optimization**

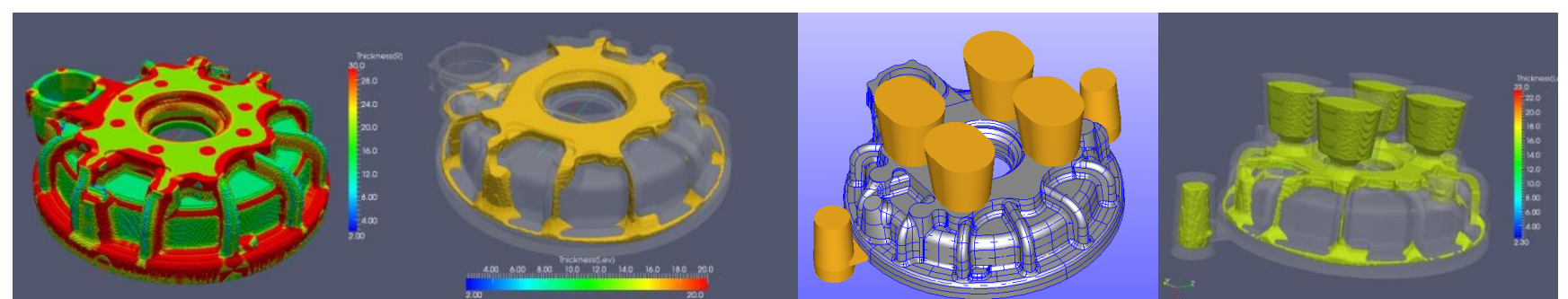


**3D part as start point**  
**3 Clicks for study**  
**3 Minutes to get result**

## Casting DFM Analysis

Geo-Designer, is a powerful upfront Design for Manufacturing (DFM) tools for designers and manufacturing engineers with innovative technology. It accelerates the design process for functions, manufacturability, enabling designs to move to production better and faster. Compared with other traditional tools, Geo-Designer is powerful, flexible, fast and easy to use and provides saving in downstream costs by quality improvement at the design stage. Geo-Designer offers a new method to study the part geometry in 3D Iso-surface with flexible transparency, it is similar the x-ray and CT method in industrial.

Geo-Designer can analysis the product thickness in ray method and the thickness level method. Users can select the analysis method flexibility based on the geometry of the part for improved results.

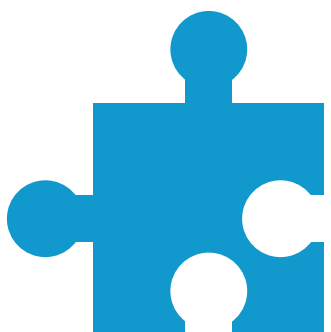


### Benefits

- Quick, easy, flexible and powerful way of checking design for manufacturing process
- Savings in downstream lead time and costs by improving quality at the early design stage
- Locates critical regions in 3D CAD models to help manufacture process design and improvement
- Improved design productivity
- Very easy to use, less than 30 minutes to learn it

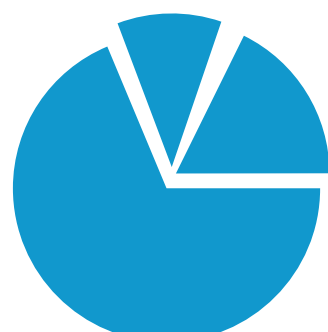
### Geo-Designer helps Casting System design

Geo-Designer helps the designer to understand the thickness/mass distribution of the gravity casting parts (upper left: Ray thickness analysis upper right: thickness level of the thicker region). Based on the thickness level results, riser and feeder for thicker zone can be designed to compensate the metal shrinkage, both the location and size could be designed in Geo-Designer. The lower pictures show the designed CAD model and the new thickness level after considering the riser and feeder.



#### Product Design

- **Product design & validation, strength and life time**
- Functions related to wall thickness, heat transfer
- Weight reduction
- Save cost for material



#### Manufacturing Process

- **Get real-time information for manufacturing process design**

#### Plastic Mould

- **Uniform thickness is best**
- Variable thickness design should be validated
- Defects caused by mass distribution & thickness
- Mould design take account wall thickness

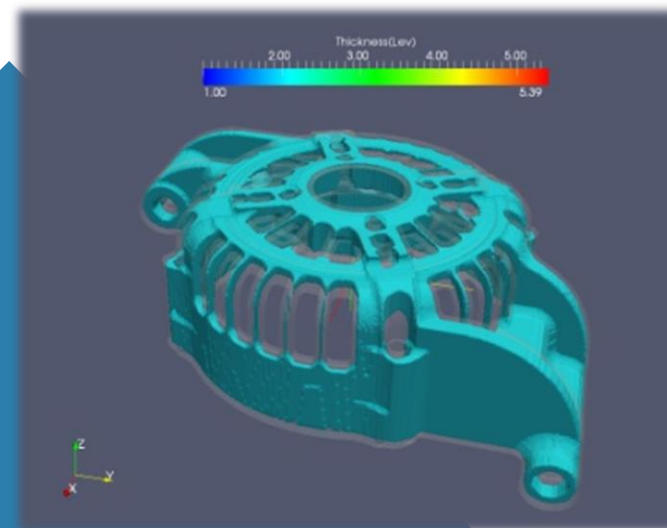
#### Casting Mould

- **Process design based on wall thickness**
- Assist riser, feeder and gating system design
- Defects caused by wall thickness (porosity)

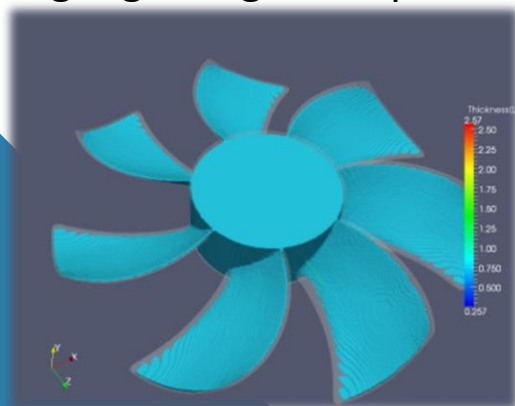


# Geo-Designer Features

- Standalone software, also possible to integrate into 3D existed CAD system
- Build in last CAE technology for upfront analysis
- Check mass distribution, wall thickness (ray and thickness level method) and cooling rate prediction of complete model
- Support 3D ISO-surface and multi-sections mode
- Easy to locate critical thickness areas
- Advanced visualization of results for easy interpretation
- Ability to clip model at any section
- Dynamic information display at point click
- Powerful filter mechanism to concentrate on region of interest.
- Detail information of analysis model: mass, volume, surface area, project area, heat modulus etc.
- Support contour, section, Iso-surface and curve
- Import STL, IGES, STEP files directly
- Design result can be exported to 3D CAD system directly
- Flexible report generation and VRML output
- Support language: English, Japanese, Chinese (T/S)



**Thicker region of high pressure die casting part**  
Thickness distribution in HPDC part is important, it should not only consider the functionally, i.e. strength issue, but also take it into account the manufacturing process, such as the porosity of casting process, which will affect the strength and life time.

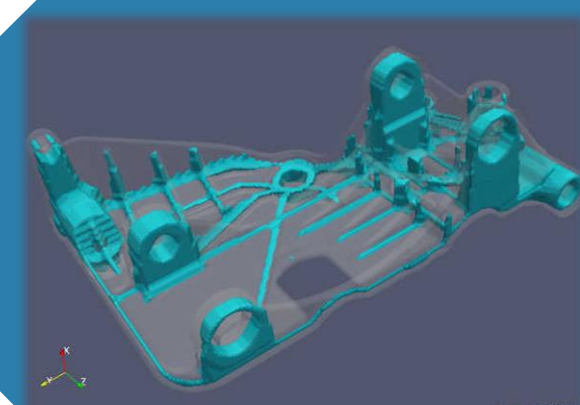


## Fan Design

Weight reduction and mass distribution of fan are critical, it is the basic function and performance requirement.

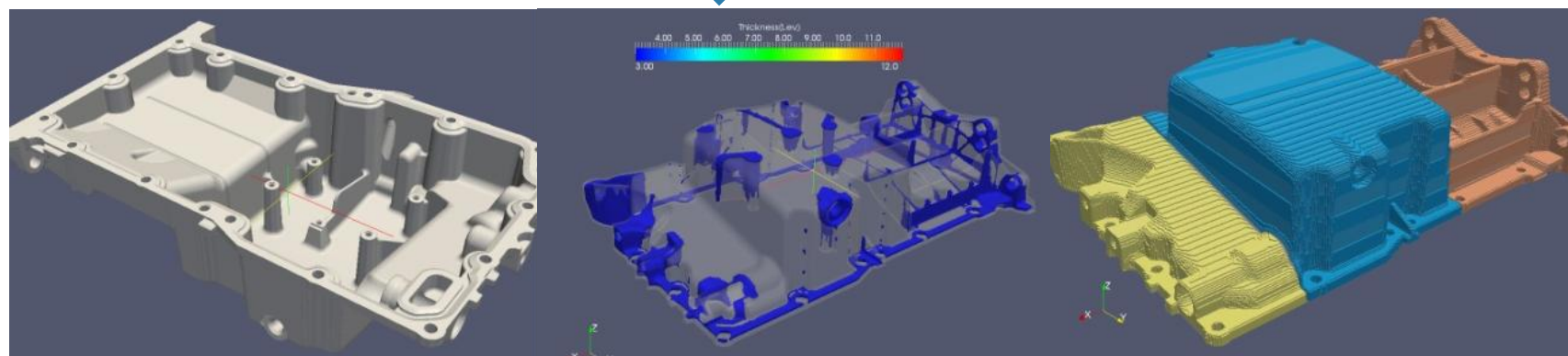
**“Geo-Designer, provides a simple but very effective way to support casting process product and manufacturing design, it cuts at least 60% of design lead time, thanks to the state-of-art technologies.”**

Prof. Z. Zhang, MSE, Tsinghua University, China



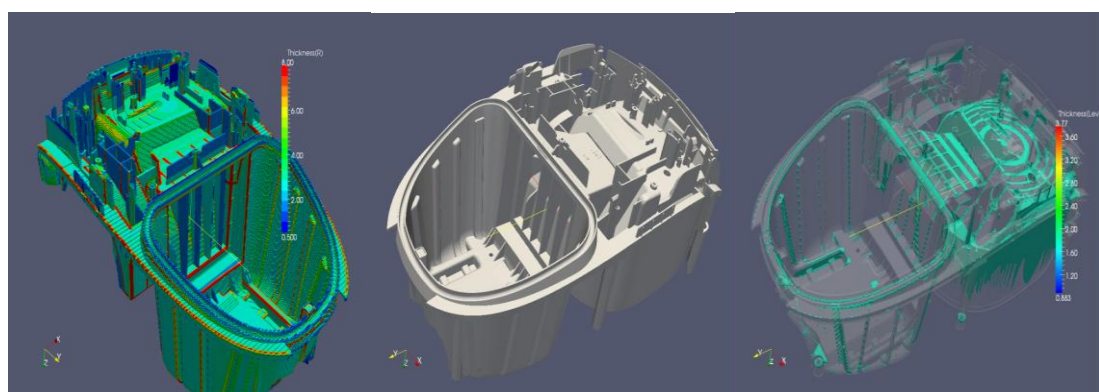
## Oil panel Design

Mass distribution, weight and thickness distribution of oil panel are very important. Thinnest and thickest thickness are critical for engine block design. (Left: 3D CAD model Middle: thickness level Right: Cast Zone analysis)



## Thickness of vacuum cleaner casing

For complex plastic part, thickness checker is not easy but very important. Geo-Designer provides simple and effective way the check the thickness distribution for such application. (Left: Thickness in ray method Middle: 3D CAD model Right: thickness level)



C3P Engineering Software International has been founded in 2006 and providing the professional design & analysis solution for the manufacturing industry. Our main products are "Cast-Designer", "Cast-Designer Weld", "Geo-Designer", "AI-FORM" and "SavingCAST", which were already captured the Global market. We have sold our products in more than 28 countries and those countries have our distributors. We are not famous by our Company name but by our products. The Software specially focuses on the virtual manufacturing field to provide end-to-end solution for metal casting, sheet metal forming, weld and assembly. Our solution built in the Design for Manufacturing, Design Capability, Advance Front Simulation, the last CAE technology, Automatic Optimization and Final Performance Validation to a whole package; to consider the Multi-Physics, Multi-Scale and Real Material. As a pioneer of numerical simulation solution provider, C3P Software provides the industry and the manufacturing business with comprehensive solutions and engineering services on a global basis to meet their expectation in high quality, on-schedule delivery within cost target. Our business scope covers software development, professional engineering service, and application software integration.

For more information, please visit: [www.c3p-group.com](http://www.c3p-group.com) or [www.cast-designer.com](http://www.cast-designer.com) or [www.ai-form.com](http://www.ai-form.com) or [shop.c3p-group.com](http://shop.c3p-group.com)

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