For your competitive edges,

# ACQUISITION PROPOSAL

Innovative CAE Solution, midas MeshFree
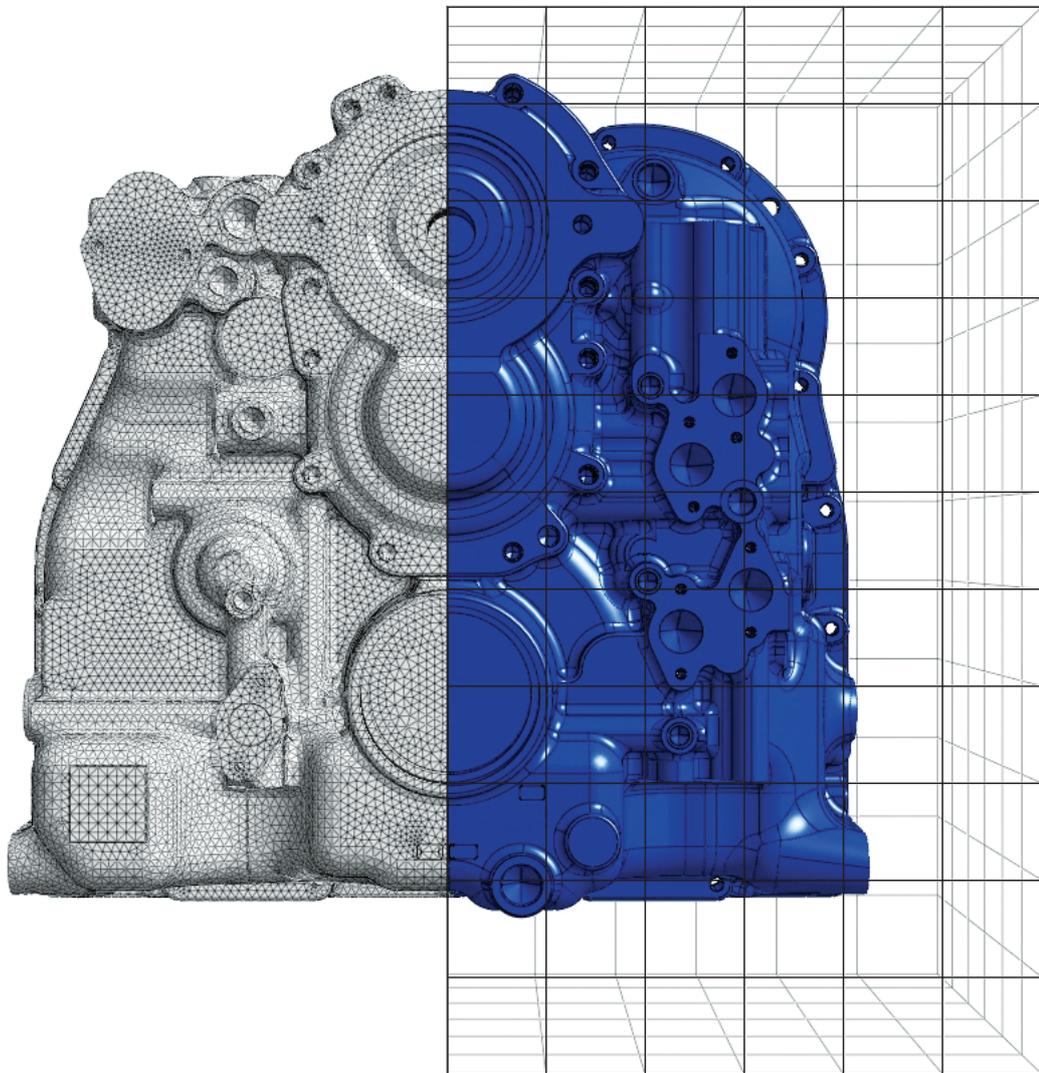


MIDAS
MESH**FREE**

# Meet brand-new CAE software

It frees you from all the difficulties of today's design and analysis software.

midas MeshFree performs analysis based on Implicit Boundary Method. General meshless method calculates deformation at the position of nodes only. Accuracy of the analysis result depends on the density of nodes. Also additional calculation of stress is required after creating internal elements. Therefore it requires large amount of memory and calculation time.

However midas MeshFree solves a problem with the identical method as FEA using 20 nodes-Hexa element structural grid. In addition it calculates results in boundary surfaces with the special integral formula. Therefore it is possible to analyze a problem faster with low usage of memory comparing to the general meshless method.
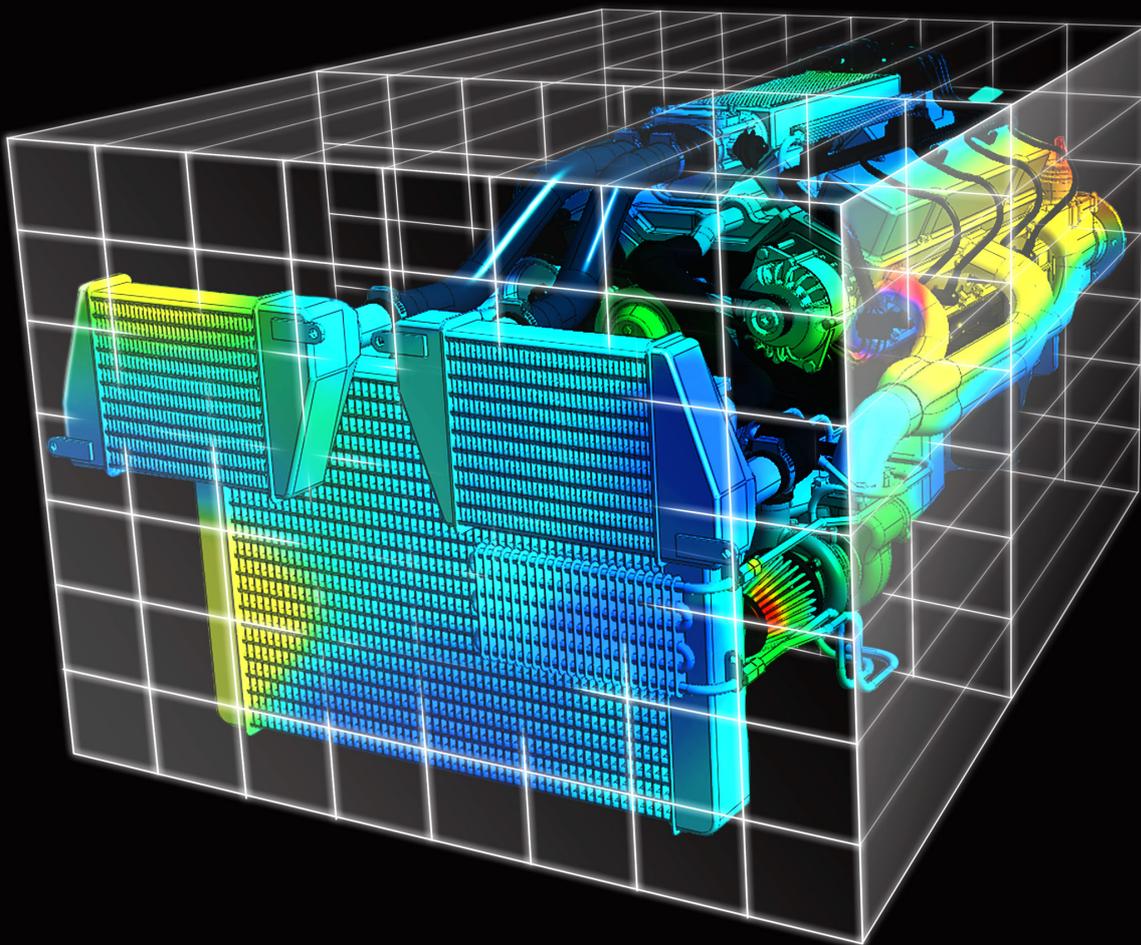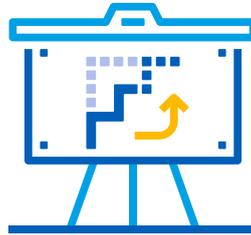
# midas MeshFree Main 3 Features

## No Clean-up & Mesh Generation

- Support all CAD programs and direct interface
(SolidWorks, Inventor, Catia, NX, Solid Edge, Creo, ect.)

- No need of complex clean-up and idealization process for generating mesh

- Securing accuracy and stability by performing analysis using original CAD data
(Reduced time at least 60%)

## Simple 3-step Analysis Process

- 3-step intuitive UI as workflow makes it easy for anyone to use

- Start the simulation immediately after installation

- Quickly verify capacity of models at the design stage

## Auto-update for Design Modification

- Auto-update the model by automatically recognizing the changed part of the design

- Automatically reflect automatically the existing load and boundary conditions

- Import model and perform analysis at the same time

# Analysis Functions in midas MeshFree

Linear Analysis

Modal Analysis

Heat Transfer Analysis

Thermal Stress Analysis

Fatigue Analysis

Optimization Analysis

Nonlinear Static

Response Spectrum

Transient Response

Frequency Response

Random Response

# The Expected Effects of Acquisition

## 1

### For Analysis Engineers,

**"60%** Reduced Analysis Time & **100%** Increased Success Rate"

With midas MeshFree, you can analyze all your CAD files faster than general FEM process. Therefore it is possible to obtain the optimal design result by analyzing several alternative design drafts without any time consuming process.

**midas MeshFree Process**

| Modeling | Define Load & Boundary Conditions | Simulation | Result Analysis |
|---|---|---|---|

**60%** Reduced Analysis Time (max 2 weeks → 1 hour)

**100%** Increased Success Rate

| Modeling | Idealization | Clean-up | Modeling | Define & Generate Mesh | Define Load & Boundary Conditions | Simulation (Error Issue) | Result Analysis |
|---|---|---|---|---|---|---|---|

**General FEM Process**

## 2

### For Design Engineers,

**"Design with Simulation"**

You can verify your design drafts by yourself with simple 3 step process. Therefore, there is no wasting time to wait for analysis results anymore. You can try various shapes of design drafts as many as you want.

### Auto·update

Apply the same analysis condition to the modified model



Auto·Update
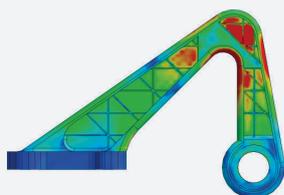
Auto·Update
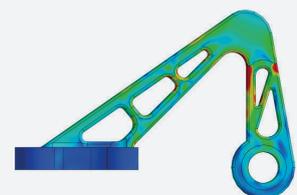
**[ Alt 1 ]**
Max. Stress : 472MPa
Weight : 0.27kg

**[ Alt 2 ]**
Max. Stress : 334MPa
Weight : 0.26kg

**[ Alt 3 ]**
Max. Stress : 186MPa
Weight : 0.22kg

# 3

## For Managers,

### "Improvement of **Work & Cost Efficiency**"

As engineers can do simulations in planning and design phase with midas MeshFree,
you can save the cost and time for experiments, manufacture of mock-up or analysis consulting.
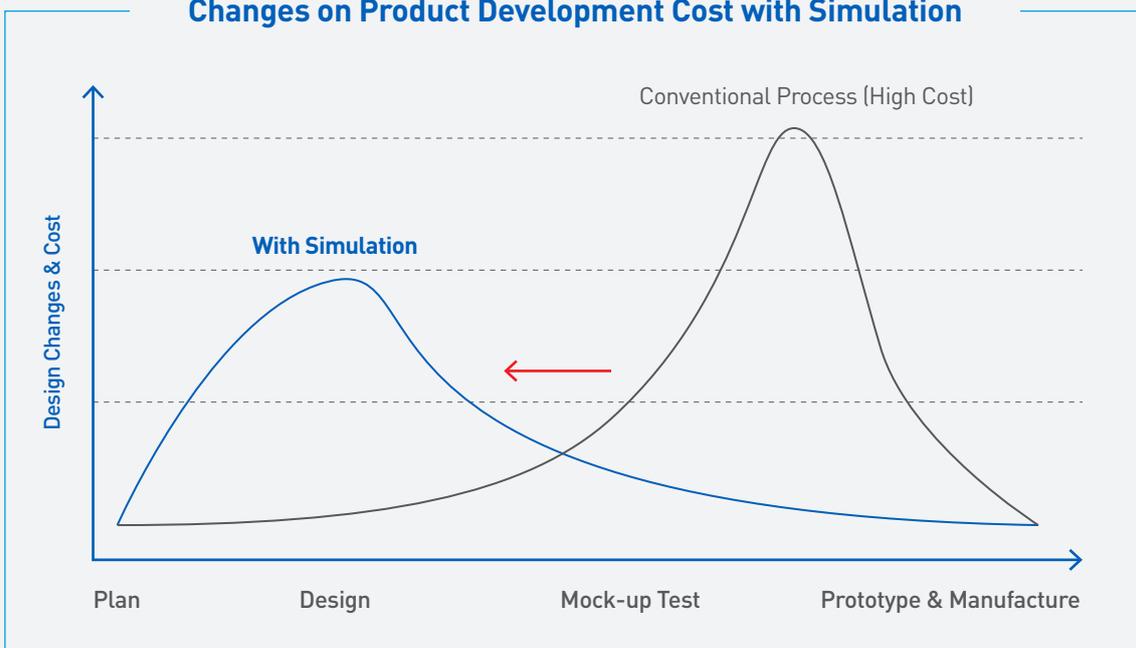
### Why Simulation?

- **70%** Fast analysis of product performance
- **67%** Increased product quality in design stage
- **52%** Enhanced cooperation between analysis engineers and designers
- **52%** Iterative assessment for various design variables

### Effectiveness of Simulation

∗ Reference : Aberdeen Group, April 2010

- **86%** Achievement of target price of product
- **86%** On time products release
- **91%** Achieve target performance in design phase
- **15%** Increased operating profit

### Changes on Product Development Cost with Simulation



Conventional Process (High Cost)

With Simulation

Design Changes & Cost

Plan　　　Design　　　Mock-up Test　　　Prototype & Manufacture

# Reliable and easy simulation

**Nam ho Kim** _ Professor
University of Florida, The department of Mechanical and Aerospace Engineering

In the traditional CAE process, after importing CAD files, engineers needed to go through the complicated process based on their experience and technology. However, in midas MeshFree, engineers are available to simulate and verify reliable results easily.

# Shortening analysis process

**Yeon ha Seong** _ Research Engineer
AC R&D Lab. Air Conditioning CAE Team - LG electronics

When performing structural analysis with midas MeshFree, I was able to reduce the time for model simplification up to 60% comparing to the other CAE program. Furthermore, MeshFree has intuitive user interface so that beginners can be accustomed with new program easily.

# Easy to use

**Won seok Lee** _ Principal Engineer
HyunDai Construction Mechanic Analysis Evaluation Department

MeshFree is optimized in the repetitive simulations as it is easy to use with intuitive UI. Therefore, beginners can utilize it very easily.

www.midasMeshFree.com

**MIDAS**