

# Analysis Service

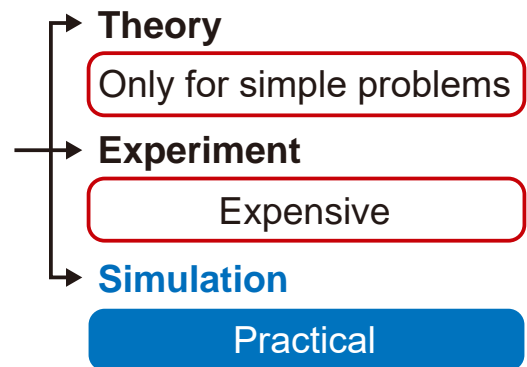


Taking advantage of our many years of product development experience, we perform simulation analysis on your behalf. We provide you with reliable analysis results.

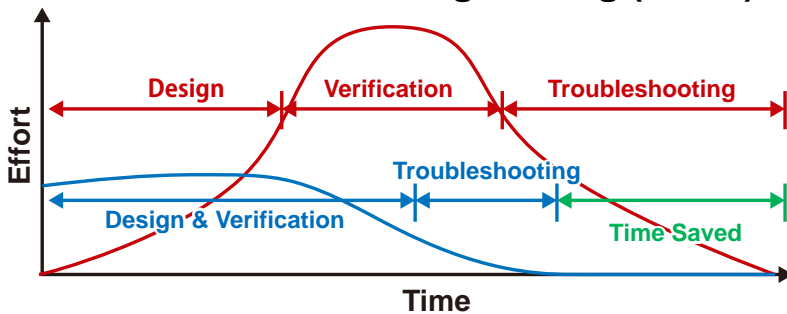
## 1. Importance of Simulation Analysis

In product design, just theory is not enough for practical use. However, verification using an actual prototype requires **a great deal of effort and cost**.

By using **simulation**, various scenarios can be replicated before implementation. The effects of changing parts and materials are also analyzed in advance, facilitating decision-making related to product design.



### Conventional (RED) VS Simulation-based Engineering (BLUE)



### ✓ Benefits

- Accurate Predictions
- Design Optimization
- Real-Time Feedback & Iteration
- Reduced Development Time
- Cost Savings

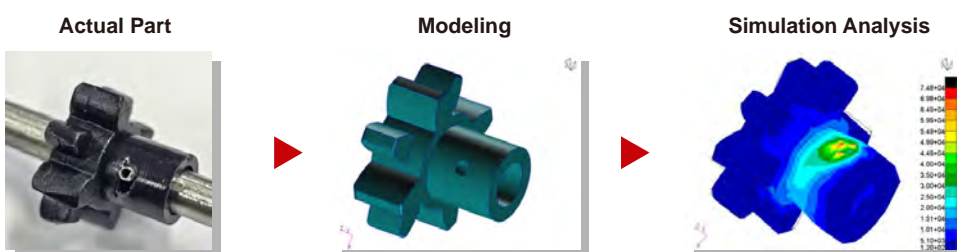
## 2. Types of Simulation Analysis

LINE SEIKI utilizes **MSC Software**, which stands as the gold standard in simulation technology and has a strong track record in various industries, including NASA.



### ✓ STRUCTURAL / STATIC SIMULATION

- What is the max stress and its location?
- What is the max deformation?
- Is my part strong enough?



**More simulations on the next page!**

## ✓ FATIGUE SIMULATION

- How many cycles until components fail?
- What is the max deformation?
- Is my design durable enough?

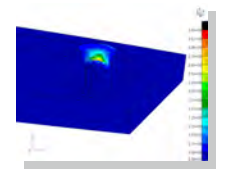
Actual Part



Modeling

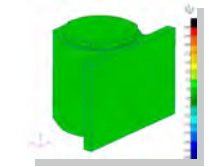


Simulation Analysis



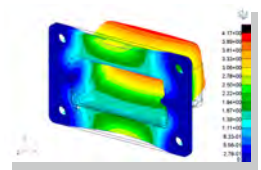
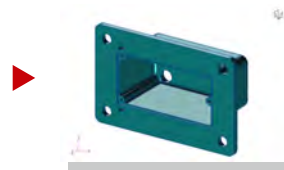
## ✓ CONTACT ANALYSIS

- What is the interaction between different components in the system?
- How do surfaces deform when in contact with each other?
- Can it be assembled without failure?



## ✓ VIBRATION & DYNAMICS SIMULATION

- What are the natural frequencies?
- How does the system respond to different vibrational inputs?
- Will it unexpectedly vibrate excessively?



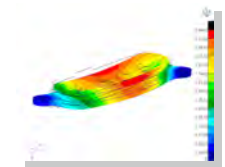
## ✓ THERMAL SIMULATION

- What is the temperature distribution?
- What are the thermal stresses and strains?
- Will my part overheat?



## ✓ BUCKLING SIMULATION

- What is the load at which a structure gets unstable and buckles?
- How do the geometry and material properties influence?
- How can the structure be optimized to prevent buckling?



The following advanced analyses are also available:

- ✓ EXPLICIT DYNAMICS SIMULATION
- ✓ IMPLICIT MECHANICS SIMULATION
- ✓ MANUFACTURING PROCESSES SIMULATION
- ✓ COMPUTATIONAL FLUID DYNAMICS SIMULATION
- ✓ MULTIBODY DYNAMICS SIMULATION
- ✓ ADDITIVE MANUFACTURING SIMULATION
- ✓ MULTI-SCALE MATERIAL MODELING
- ✓ TOPOLOGY OPTIMIZATION
- ✓ ACOUSTIC SIMULATION
- ✓ DROP SIMULATION



## ■ 3. Process of the Service

### 1. Developed Model (Pre-Processing)

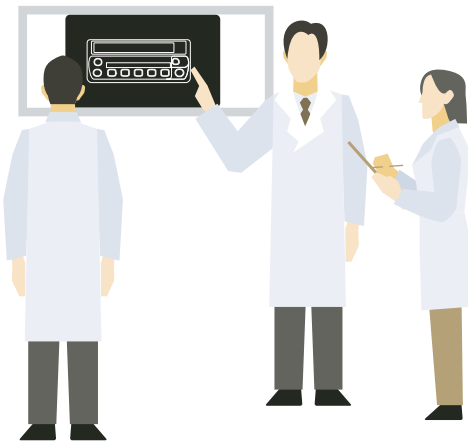


Provide us with some information necessary for analysis.

- Import CAD model into CAE software.
- Create a mesh model.
- Define material properties.
- Define boundary conditions. etc.



### 2. Type of Analysis (Solver)



Analysis is performed from various aspects.

Computation based on the conditions set in Pre-Processing.



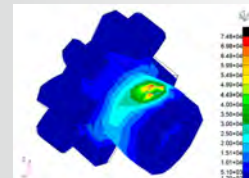
### 3. Results (Post-Processing)



The report of analysis results will be submitted to you.

Process the results of computation for visual perception :

- Stress Distribution
- Deformation etc.



You can also count on us in product design, prototyping, & development!



# LINE SEIKI

Address : 37-7 Chuo-cho, 2-Chome  
Meguro-ku, Tokyo 152-0001 Japan  
Visit our company website for contact details.  
E-mail address : [webtrade@line.co.jp](mailto:webtrade@line.co.jp)  
Product page : [www.lineseiki.com/cae/](http://www.lineseiki.com/cae/)

