**Effect**

Shortening Development Period, Weight Reduction, Cost Reduction

**Points**

Outline of "KOBEST"

A: Extracting multiple cross sections of part shape

B: Restriction condition of part shape
   Required bending moment (distribution)

C: Total plasticity moment (valid width) of each cross-section is computed

D: Optimization of shape

Optimization Program

Optimum Shape

An Example of Discussing Optimization of Automobile Center Pillar

<table>
<thead>
<tr>
<th>Before Optimization</th>
<th>After Optimization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reinforcement Parts</td>
<td>Reinforcement Parts</td>
</tr>
<tr>
<td>Used material 440~590MPa material</td>
<td>Used material 590~980MPa material</td>
</tr>
</tbody>
</table>

- Distribution of Bending Moment after Optimization
- Combinations of the boards and parts shapes that give the necessary moment were automatically obtained
- Possible weight reduction by about 2kg (30%)