Path Optimization for a Sequence of Operations
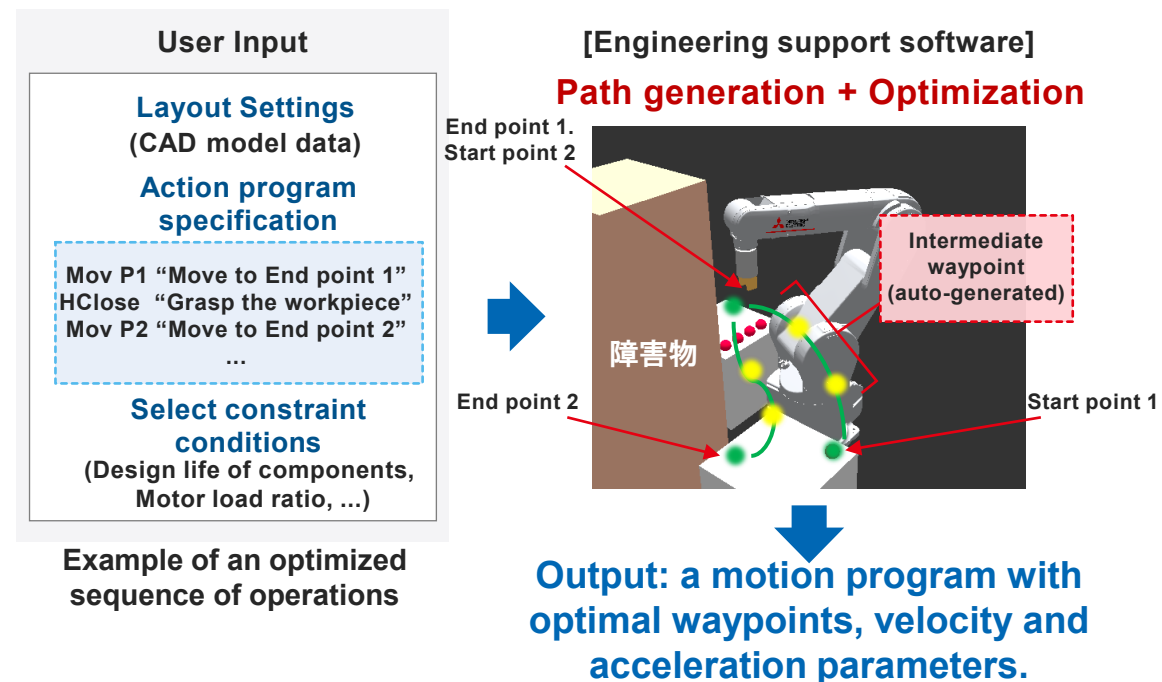
Coming soon

Automatically generates paths that do not interfere with surrounding equipment and achieve both high-speed and long-life operations

Applies an overall optimization algorithm*1 to adjust motion under conflicting constraints

AI automates the adjustment of path/waypoints and motion parameters, then design work to adjust motion does not needed!

※1 Patent registered

User Input

Layout Settings
(CAD model data)

Action program specification

Mov P1 "Move to End point 1"
HClose "Grasp the workpiece"
Mov P2 "Move to End point 2"
...

Select constraint conditions
(Design life of components, Motor load ratio, ...)

Example of an optimized sequence of operations

[Engineering support software]

Path generation + Optimization

End point 1.
Start point 2

Intermediate waypoint (auto-generated)

障害物

End point 2

Start point 1

Output: a motion program with optimal waypoints, velocity and acceleration parameters.

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Example: Generating multiple paths with different loads + overall optimization of waypoint, speed and acceleration of the motion

Adjustments are quickly implemented by a multi-objective optimization AI that optimizes tact time and lifetime during a sequence of operations[1]

The layout can also be optimized when starting up and switching the product type, by adjusting the installation position of the robot.

※1 Patent registered
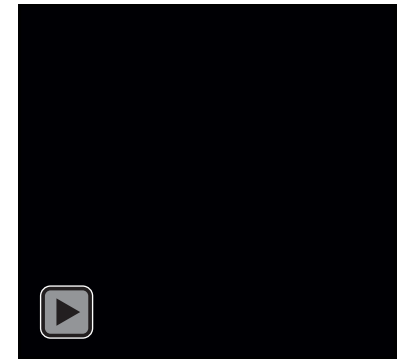
Verification case: Pick and place path optimization

Pathway adjustment by human

- Design time (path) : Half day
- Tact time: 0.43 seconds
- Lifetime : 14,721 hours
- Load ratio: 64%
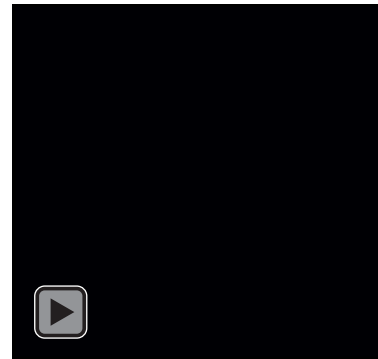
Automatic path optimization (by multi-objective optimization AI)

- Search time: 1 hour **[No manual intervention]**
- Tact time: 0.36 seconds **[Reduction of 15%]**
- Lifetime : 19,450 hours **[Improved by 30%]**
- Load ratio: 60%

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