
SMART ROBOT MOTION FOR PRODUCTION



INTRODUCTION

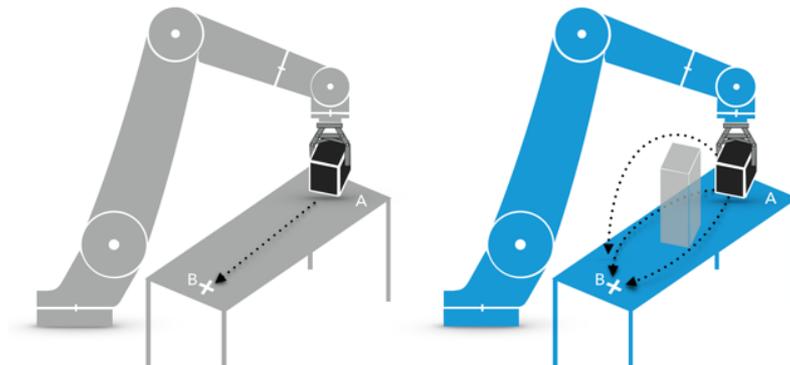
Motus' intelligent solution allows industrial robot arms to optimize their motion for various applications. This brings several advantages, the 2 most important are reduced energy costs and increased productivity. This is possible throughout our intelligent path planning solution which we offer throughout consultancy today, and soon throughout Software as a Service.

Benefits for our customers are:

- Reduced energy costs
- Increased productivity
- Prolonged lifetime of robots
- Reduced environmental impact
- Professional service & risk-free process assessment
- Payback period as short as 2 days

OUR TECHNOLOGY

Robot applications today are manually programmed, leaving the engineer with the task of finding the fastest motion path(s). In today's complex applications the solution is never as easy as a straight line, as obstacles need to be avoided. Even in the simplest case (blue robot), there are an infinite number of solution paths. Thus, finding the best path is impossible when programming the robot application manually.



We have solved this path planning problem which applies to every arm-type robot of any brand. Our automatically generated and optimized paths enable us to considerably decrease the engineering time from weeks to hours, and ultimately increase the robot's profitability. In short, we can optimize in 2 ways:

1. Reducing energy costs, while maintaining original productivity
2. Increasing productivity, while maintaining the original operation sequence

Our smart path planning solution increases an application's productivity up to 15%. And, it decreases the robot's energy consumption by up to 40%. All in all, the profitability of every robot application is increased dramatically.



OUR SERVICE

With our service to our customers we optimize existing robotized production, from single robot cells to entire production lines.

Our service is subject to a service fee and the extend of our service is:

1. Assessment of current robot operations and applications
2. Implementation of optimized operations and applications

Assessment

During the assessment phase, we gather necessary process information and evaluate possible improvements. As a result, a simulation of the improvements is generated which will provide a clear understanding for the customer, supported by data of economic improvements.

If required, we may implement the optimized programs on an experimental robot platform for evaluation. During assessment, we do not interfere with factory processes, hence, the customer is not exposed to any production-related risk.

Implementation

After the assessment, the customer will decide about the implementation of the optimized processes. This will require a production shut down, as the new robot scripts/programs will have to be downloaded onto the robots. This shut-down can be combined with a re-tooling or maintenance shut-down.

APPLICABLE ROBOTS

There are different types of robots that are commonly used in the industry, and these types may profit from Motus' technology differently. The most common robots are: 4-, 5-, 6-, 7-axis robots (arm-type robots), SCARA, Delta robots or parallel manipulators, and Cartesian robots. Currently, Motus Operandi does not offer any service for SCARA, Delta or Cartesian robots.

All arm-type robots benefit from Motus' technology, from any robot manufacturer.

SUITABLE APPLICATIONS

Generally, it can be said: any application comprised of point-to-point motion operations can benefit from our technology. In contrast, painting and arc-welding applications (operations that follow a strict path or geometry), cannot be optimized, yet.

Different applications may benefit to a different extend by Motus' optimization solution. There are plenty of different applications in the industry, some of those are listed below.





Palletizing

This is a typical logistic application, where robots are deployed at the end of a line to either stack objects on pallets, or lift and move the complete pallet. Typically, the loads vary from 20kg to 500kg, and the motion between pick-up and drop-off point is not constrained by the environment.



Machine Tending

This is a typical pick & place application, where objects are transported by the robot from machine to machine. The only way to increase the productivity of such applications is to optimize the robot's motion path, as the machines typically have fixed processing times to transform objects.



Spot Welding

Spot welding is a point-to-point operation. Applications in the automotive industry are car chassis (body-in-white), car seat frames, and other metallic frame structures. These are very complex applications and the engineering time for such applications typically take weeks. With the ability to automatically generate optimum paths, this time can be reduced to hours.



Assembly Tasks

Before a part is assembled with a new part, the new part has to be transported to the assembly location. These are typically long movements with great potential to increase the robot's speed and the applications productivity.

CONFIDENTIALITY

Motus Operandi guarantees to not share customer information and process-relevant data with third parties. All gathered process data is used for the benefit of the customer.

WARRANTY

Motus Operandi guarantees to not infringe any warranty provided by system integrators or robot manufacturers. All optimized programs and processes will uphold employed safety standards and improve applications within a robot's performance limitations.

For more information, please contact: info@motusoperandi.com