

OPTIMIZATION - MODERNIZATION - RETROFITTING

Using Virtual Modeling / Finite Element Method (FEM) to Optimize and Troubleshoot Factory Logistics and Automated Processes



Virtual process modeling helps detect motion-related weak spots and saves money.

PSI Technics' virtual process modeling is a comprehensive service offering aimed at optimizing *existing factory logistics*.

Our virtual design engineers use powerful software to determine the optimization potential of your processes.

We can assist you with designing and commissioning *new installations* to help minimize the risk of positioning errors that lead to excessive costs.

By providing sustainable energy savings and by reducing facility wear, PSI Technics optimizes both process and maintenance costs. Improving the mechanical design of your installation through modernizations and replacing inefficient drive or control technology components leads to higher machine availability, material savings and shorter cycle times.

At PSI Technics, virtual process modeling goes beyond outlining a desired machine behavior. We offer you an actual representation of the behavior of your specific machines, providing detailed insight into both physical and technical aspects of your installation using real data that far exceeds rough approximations or guesswork.

After the analysis is complete, we provide you with a sound basis for improving your installation – giving you a complete picture of the tangible optimization benefits that lie ahead.

YOUR ADVANTAGE:

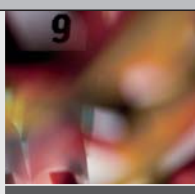
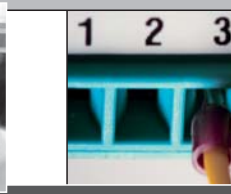
- >> Optimized process costs
- >> Energy savings
- >> Increased availability
- >> Shorter cycle times that match your specific process
- >> Reduced facility wear
- >> Reduced operating and maintenance costs
- >> Improved quality and sustainability of your processes
- >> Consistent use of lightweight components to reduce installation weight



Take advantage of the possibilities of virtual modeling to improve the efficiency of your installation.



PSI Technics offers you a "glimpse into the future" of your installation – enabling you to predict and avoid costly downtimes for new and existing installations.



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Your Economic Advantage: Technological Progress Ensures the Availability of Your Installation and Offers a Competitive Advantage

Our Process Optimization Approach

PSI Technics uses proven procedures, including the Finite Element Method, the dynamics of multibody systems, durability analyses, control technology and systems theory to simulate and analyze processes. Innovative combinations of these methods offer unique possibilities – talk to us about your individual requirements.

For existing applications, PSI Technics creates a virtual model within an interactive environment that comprises the entire system, from system mechanics to drive and control technology. This model serves as a basis for detailed analysis. It allows us to pinpoint and evaluate stress and strain, weak spots and potential changes for improvement. Any analysis is always backed by measurements taken by our optimization experts on-site. If desired, we offer recommendations for improvement, and verify potential profitability gains.

For new applications, PSI Technics simulates the expected system behavior and performance prior to the actual installation to predict and to significantly improve machine behavior early in the planning stage. This approach also enables us to compare designs of different providers to support your decision-making process, thus helping you to make the right investment.

Analysis Methods

Several aspects of machine behavior, such as mechanical, electrical and thermal behavior of components and installations can be simulated, analyzed and evaluated simultaneously.

Our experience shows that more than 90% of all installations have optimization potential and that different aspects offer room for improvement. Acceleration and deceleration processes put a strain on machines and contribute to wear and premature aging of system components.

Even a small reduction in mechanical stress can significantly extend the lifespan of an installation. Such a reduction can, for example, be obtained by using innovative control technology such as PSI Technics' ARATEC® Positioning Solution System, that reduces both wear and energy consumption while optimizing motion sequences.

In the past few decades over-dimensioned components were often suggested for a particular application. For example, oversized motors that are frequently operated 60% below their rated capacity work but are inefficient. Rising energy costs and an increased environmental awareness have brought about a change in attitude, however.

PSI Technics measures the energy consumption of your machines and optimizes drive technology for rated capacity. This often opens up possibilities for feeding energy back into the grid and for intermediate energy storage. In doing this, we are improving the sustainability of your production processes.

Quality and Reliability

We are measured against the quality of our services. It is only natural that we critically examine our results and verify them by measurement methods, such as a performance analysis. Reliability, our commitment to excellence and on-time service describe our customer-focused approach.

A wide range of internationally renowned customers – leaders in their fields – rely on our solutions and our services. PSI Technics supports its customers 24 hours a day, 7 days a week – anywhere in the world, at any time.

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