



OptPro

State-of-the-art solution
for solving complex production
scheduling problems

Optimize to:

*Size a job, and
Assign to a line, and
Sequence all lines, to:*

- Maximize throughput
- Minimize cost

*While addressing
constraints:*

- Inventory (raw and finished)
- Resource availability
- Changeovers
- Maintenance
- Planned / unplanned downtime
- Priority orders

Developed by:

A team of *PhD scientists and industrial engineers*, **OptPro** fills a void that currently exists for companies with *complex planning* and/or *operational process scheduling requirements*.

Manufacturing companies whose production costs represent a significant portion of the price of their products can gain a source of competitive advantage by creating optimal production schedules.

For these companies, *multiple products* often share *common manufacturing infrastructure and resources*, and *production schedules are required* on a regular and timely basis. In addition, *plant expansions* are very expensive and *better production schedules* allow companies to *increase throughput significantly without incurring large capital expenditures*.

Current alternative solutions either make severe *simplifications of the processes* they are trying to represent, or *consider only portions* of a complete process, or do not *provide an integrated system capacity and job sequencing framework*. Although appealing for their *simplicity*, these methods produce *inferior results* as they ignore *relevant attributes of the tasks* such as penalties for tardiness, *interactions with other tasks*, availability of resources to *perform all the work*, variable batch sizing, changeover and *setup times and costs*, etc.

OptPro uses *superior optimization - based metaheuristic techniques* to find an *optimal solution* to maximize or minimize metrics such as throughput, *capacity utilization*, makespan, or *operating cost*.

OptPro couples optimization with a digital twin of operations, and utilizes powerful algorithmic and analytical techniques to deliver truly *optimal* schedules

Features & Capabilities

- The product of 30 years of **OptTek** leadership in optimization technology
- Optimizes production schedules by simultaneously optimizing sequencing, line-assignment, and capacity
- Enables better satisfaction of customer demands
- Enables production schedules that drive competitive advantage
- Increases total production 10-15% without capital increase
- Improves On-Time-In-Full (OTIF) delivery by 10-20%
- Reduces production cycle time by 8-12%
- Reduces product waste by 30-50%



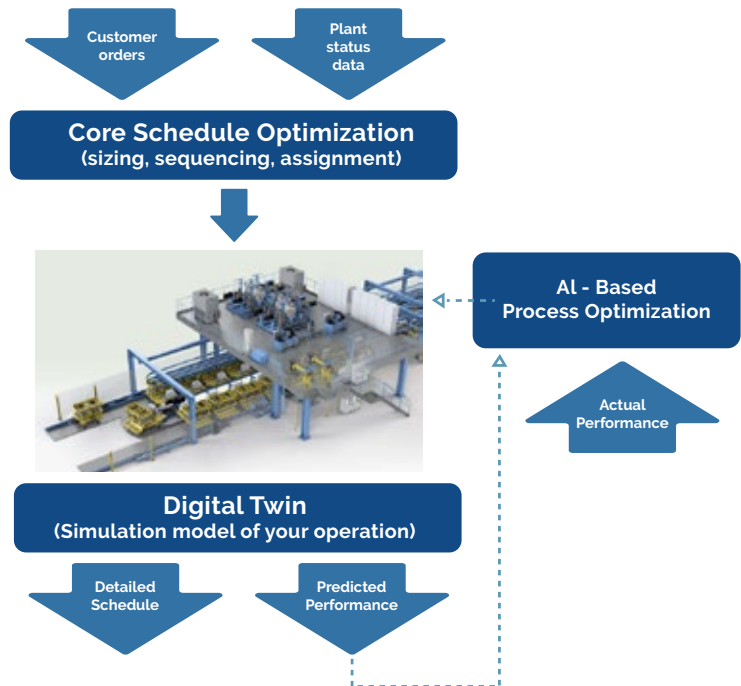
4684 S Hampton Cir
Boulder, CO 80301

720.987.6111

www.bettersolv.com

A Modular Approach

Production scheduling and operations are intricately connected with the best schedule requiring the best process to produce the best results. Most production systems can be improved by tuning the process to the schedule. **OptPro** is the only system that combines these functions into a modular integrated system to optimize the production facility from production plan to finished goods.



Core Optimization

Highly complex production environments are often tractable enough that they can be solved with **OptPro** Core Optimization alone. **OptPro** uses powerful, but flexible, algorithms to create an optimum schedule for these cases.

Digital Twin

For systems exhibiting a larger degree of complexity, **OptPro** uses a digital twin model of the process combined with **OptTek's** proven simulation optimization AI-based technology to optimize the production environment. The result is maximum efficiency, minimizing waste while meeting customer demands.

AI

In some cases, the core problem is process inefficiency. The schedule may be optimal, but the process needs to be tuned to produce the best results. In this case, **OptPro** can take the schedule and utilizing AI, determine the values for operational parameters (e.g., flowrates, speeds, capacities, buffers, and many other operating conditions) that optimize performance to that schedule.

In summary, **OptPro's** modular design can be used to optimize schedules and processes all at once or in phased approach, depending on the needs.