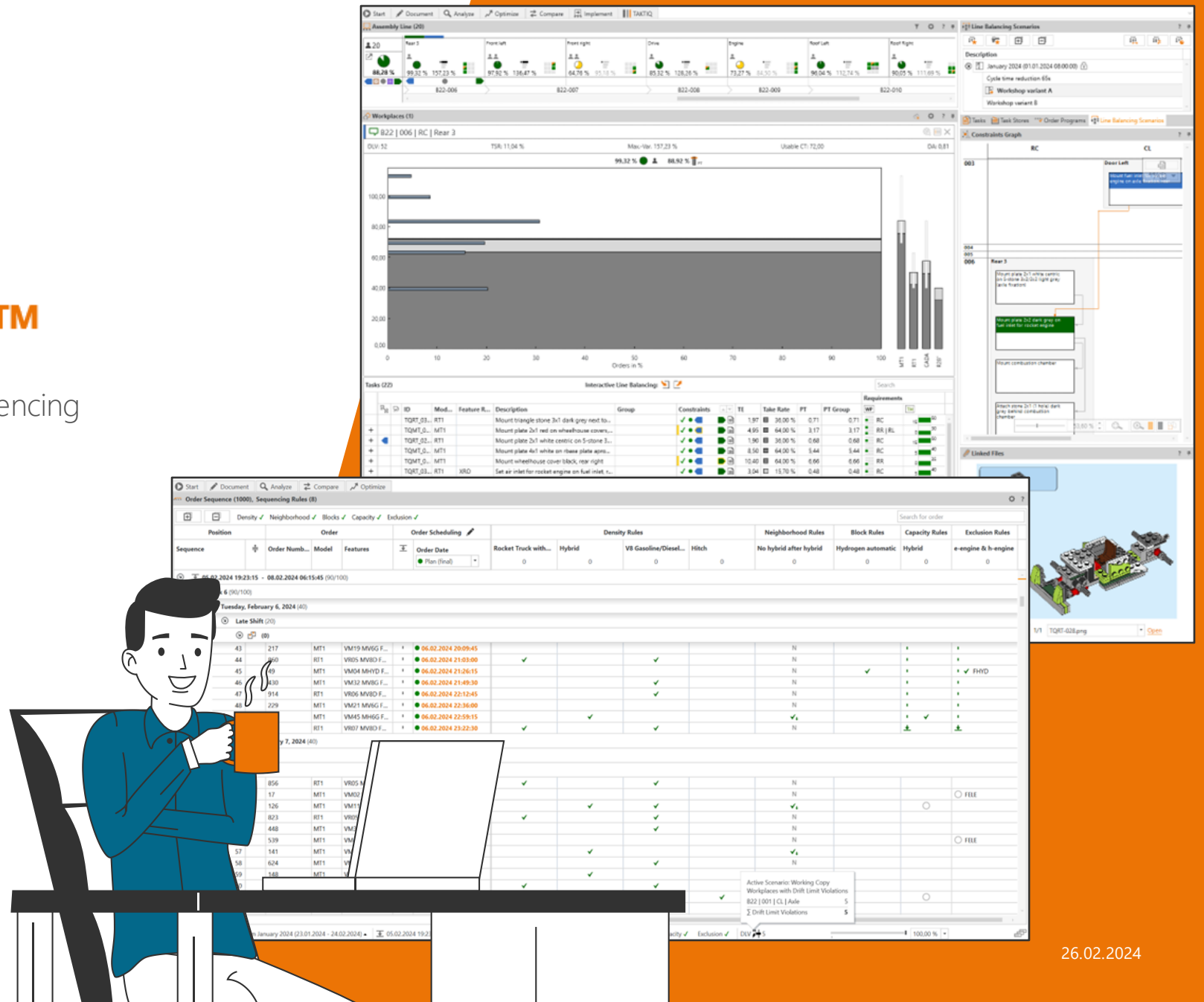
TAKTIQ

AssemblySuite™

Smart Line Balancing and Order Sequencing
for Maximum Efficiency



Facilitate Production Planning, Unlock Maximum Potential

Focus on variant-rich assembly lines:

- 20sek.-6std. **cycle time**
- 100-2.500.000 **tasks**
- 10-50.000 **orders**
- 2-10^{27} **order variants**

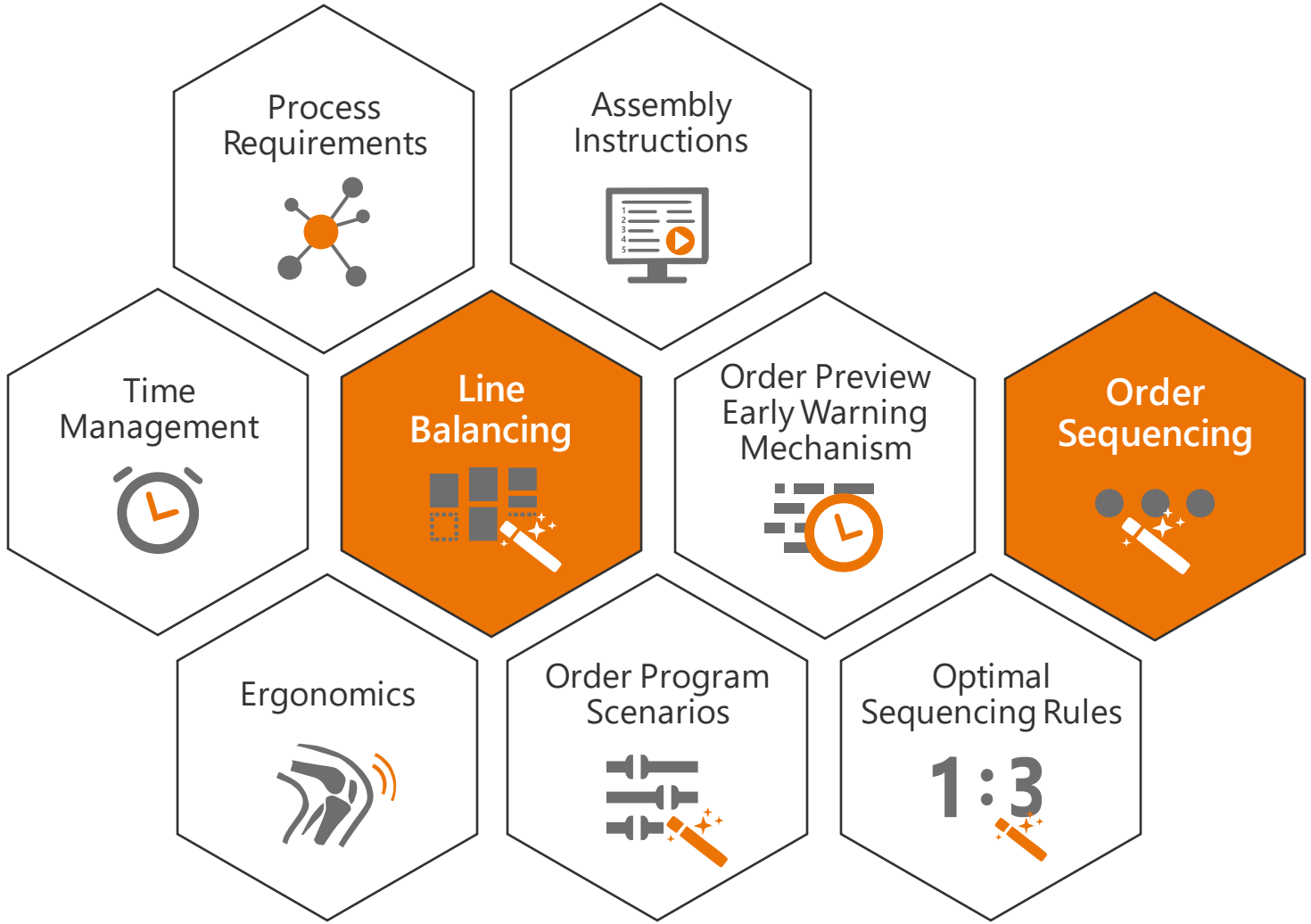
+12%	-50%	+100%
Efficiency	Planning Effort	Planning Reliability

User-Centered Innovation

- **Love Agile Development**
  Through continuous innovation, we are actively shaping the future of production planning.
- **Life Close Cooperation**
  With fun, partnership and transparency, we make variant diversity manageable.
- **Deliver Focused Software**
  Customized functions and updates enable leading manufacturers to achieve ever new levels of quality and efficiency.

Explanatory Video AssemblySuite™

AssemblySuite™ Modules

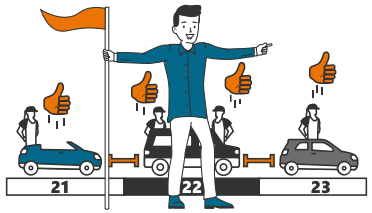


Next Steps

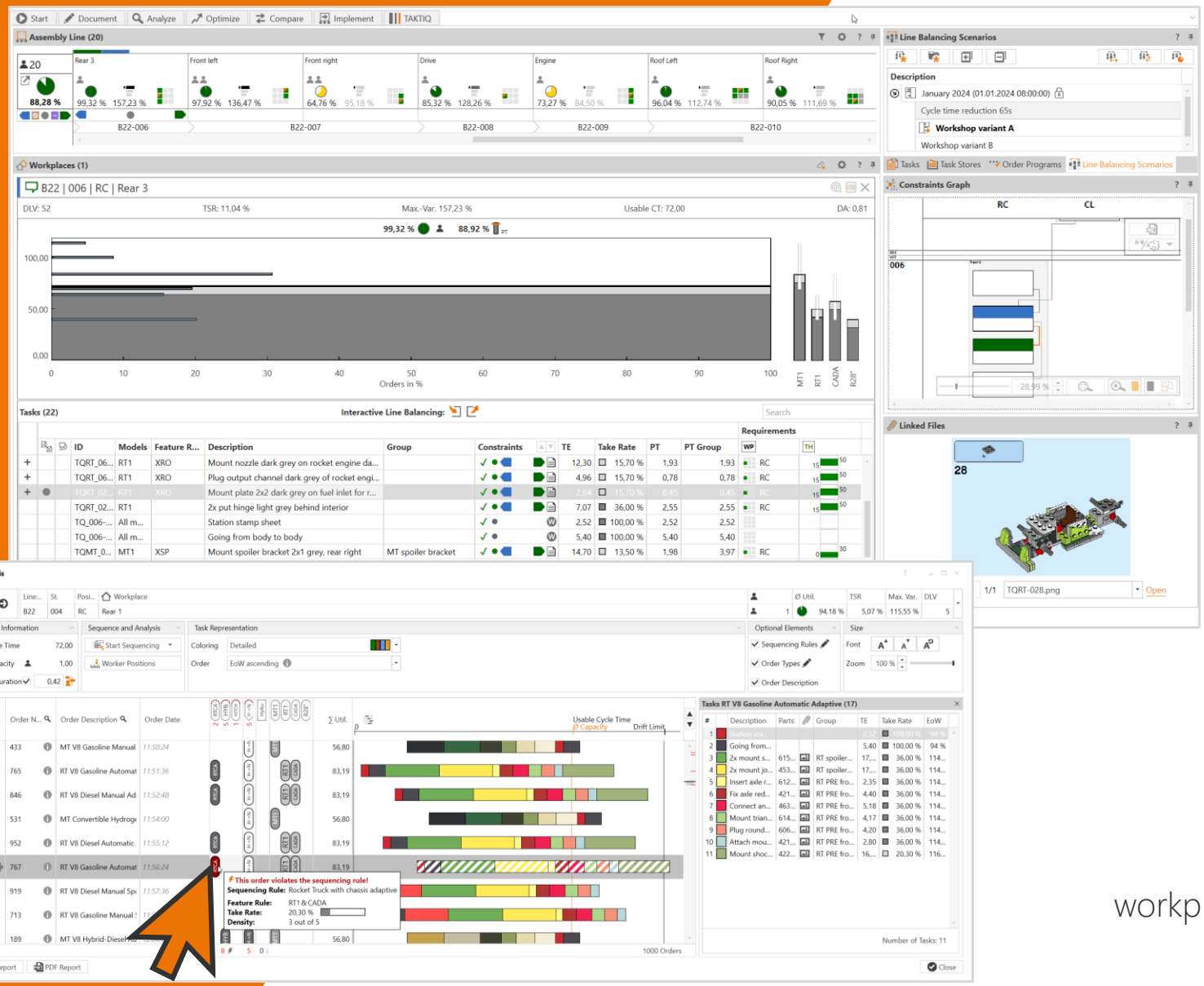
Download Free Demo Here
Independent test application of the AssemblySuite™ with your own or sample data

Request Free Live Demonstration Here
Presentation of AssemblySuite™ and discussion of your requirements, production features and usage scenarios

Risk-Free Pilot Project (Learn More)
Using the AssemblySuite™ in parallel to your current system, tailored key user training, guidance by personal consultant



Revolutionizing Rollout (Learn More)
Full integration into your IT, tailored training, frequent exchange of experience



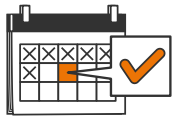
Line Balancing

Optimally distribute workers and tasks to workplaces for efficient and smooth production

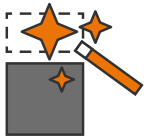
Benefits – Line Balancing

Your Result

Maximum Efficiency



Smooth Production



Reduced Planning Effort

Valuable Information in Seconds

- Interactive and automatic line balancing
- Calculate, simulate and evaluate alternative planning scenarios extremely quickly (> 1,000,000 solutions in 5 seconds)
- Compare different cycle times and line balancing solutions
- Consider multiple order programs (variants and mix) and evaluate utilization and added value
- Flexible variant linking with any feature rules (And, Or, Not, Bracketing)

Ensure Feasibility

- Evaluate variants and production times in detail
- Use extensive analysis functions and visualized key figures (time spread, drift, ...)

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Learn Quickly, Plan Intuitively

- Clear and easy to understand visual representations
- Modern user-friendly interfaces
- Automatic workshop protocols and reports
- Smooth multi-user planning with time versioned plan states (when using a server)

One Tool for Everything

- Documentation, simulation and optimization in one
- Integrated planning with additional modules: Time Management, Ergonomics, Order Preview, Order Sequencing and more

Permanent Technical Pioneer

- You always remain highly innovative through our agile development process
- Regular updates with new features are inspired by impulses from our customers

Business Case with 25 Workers – Line Balancing

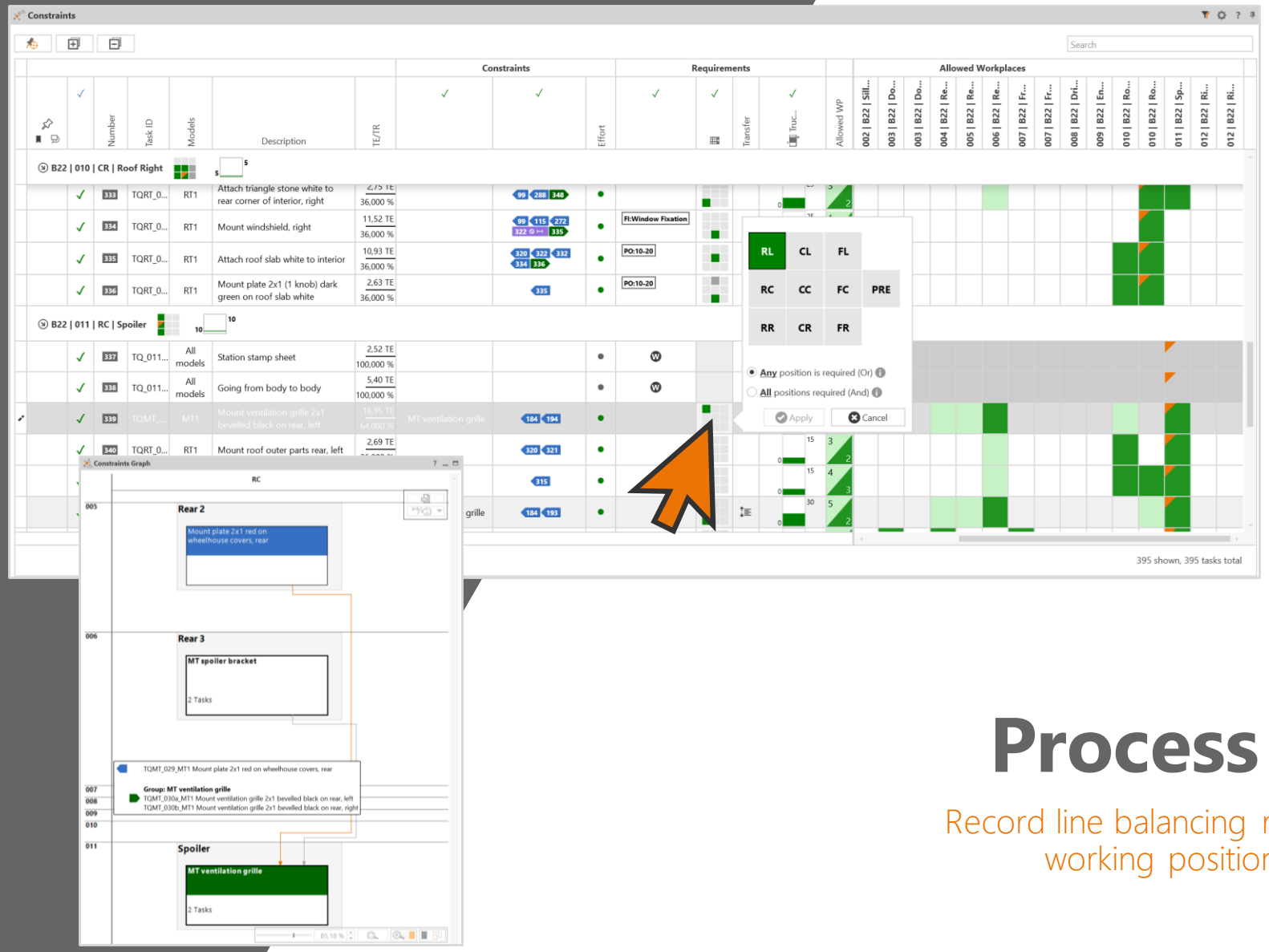
Production per year:	**Before**	**With AssemblySuite™**	
Utilization	77%	▲ 15%	92%
Cycle time	21 min	▼ 10%	19 min
Necessary workers	25	▼ 8%	23
Necessary line stops and support operations	2.520	▼ 71%	720
× Ø Costs for line stops and support operations		300 €	
× Cost **per worker**		60.000 €	
Production costs per year	2.256.000 €		1.596.000 €

Planning per year:	**Before**	**With AssemblySuite™**	
Performed line balancing	12		12
Team effort **per line balancing**	160 h	▼ 50%	80 h
Line balancing constraints	0 h	▲ 100%	32 h
Training time for new planners	210 h	▼ 50%	105 h
Effort for every line balancing	2.130 h	▼ 48%	1.097 h
× Hourly rate planner		40 €	
Administration costs per year	85.200 €		43.880 €

i Data based on empirical values of previous use cases.
Savings vary depending on size and characteristics of production.

Saved costs:
-701.320 €

▼ 30%



Process Requirements

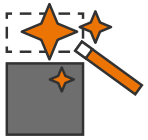
Record line balancing requirements (predecessors, heights, working positions, tools) to ensure feasible solutions

Benefits – Process Requirements

Your Result

Identify More Potential

Ensure Feasibility



Enable Interactive and Automatic Line Balancing

Optimize Production Even Further

- Identify optimization potentials more easily (reduce walking distances, avoid height changes, identify redundant tools)
- Speed up workshops and avoid overlooked requirements
- Use suggestion mechanisms and automatic line balancing
- Identify and resolve limiting constraints

Simple Maintenance, Great Benefits

- Easily maintain detailed requirements (height, working position, tools, ...)
- Manual and automatic task shifts meet all requirements
- Pre-evaluate investments in additional tools, shopping cart concepts and rebuilds

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Objective Feasibility Check

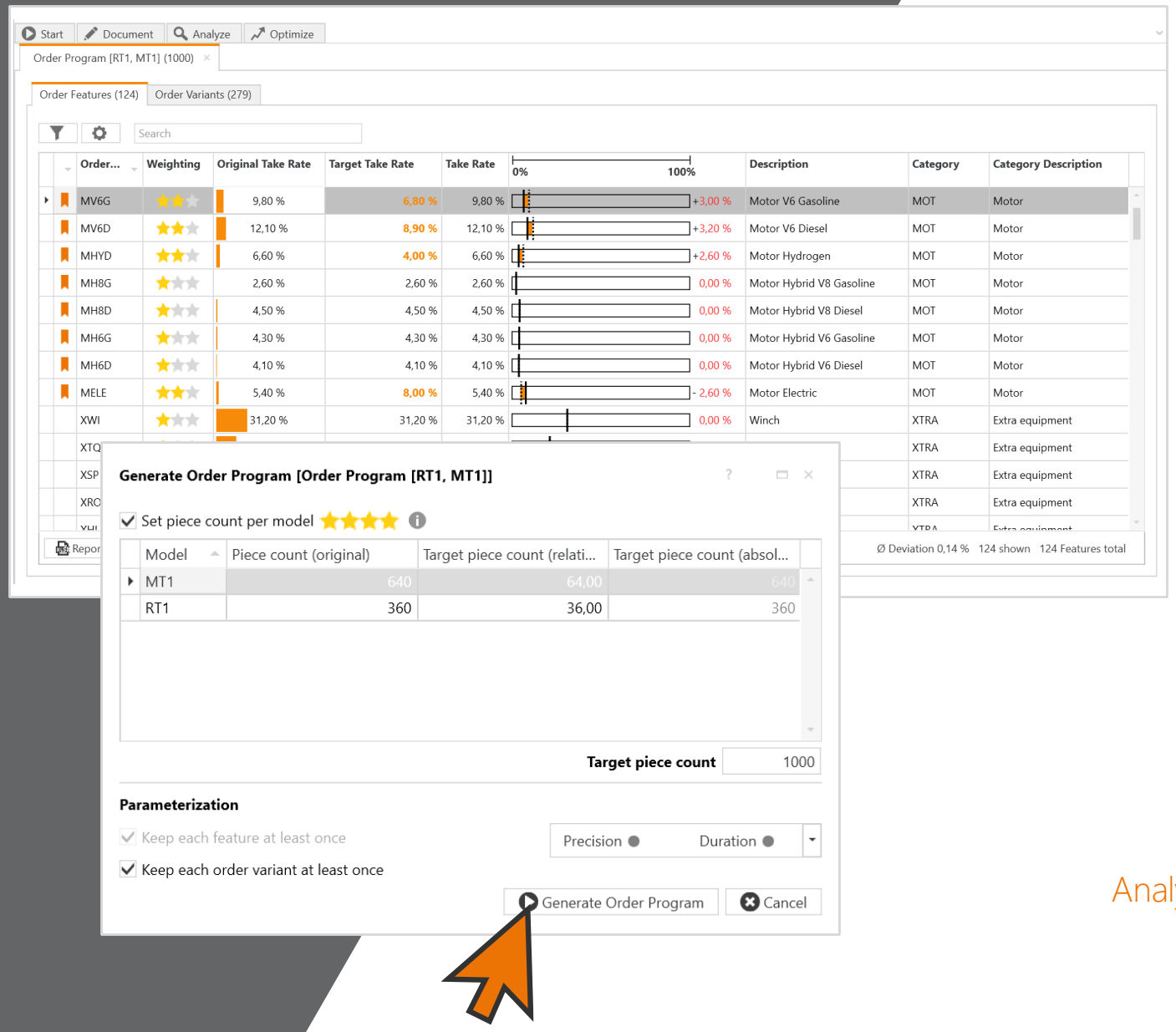
- Clearly define requirements and always comply
- Live feedback on compliance and violation of maintained constraints
- Avoid discussions

Everything in Sight

- Height profile in assembly line clearly visualized
- Directly detect conflicts in assembly areas
- Interactive constraints graph visualizes relationships between tasks
- Recognize and resolve large task groups and limiting constraints

Collect and Secure Knowledge Centrally

- Document production knowledge directly and pass it on easily
- Train new colleagues more quickly

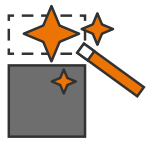


Order Program Scenarios

Analyze order programs in detail as well as generate and simulate them based on sales forecasts

Benefits – Order Program Scenarios

Your Result



Generate Order Programs Close to Reality

Increase the Quality of Analyses

Extreme Responsiveness

Interactive and Live

- Adjust feature frequencies without having to edit individual order variants
- Automatic check of buildability rules when manually changing variants
- Simultaneous adjustment of several take rates and total number of orders
- Split order programs easily according to rules

Many Options, Easy Navigation

- Create features and use them for optimization or analysis as desired
- Sort order features into categories and easily find them again

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Plan Realistically

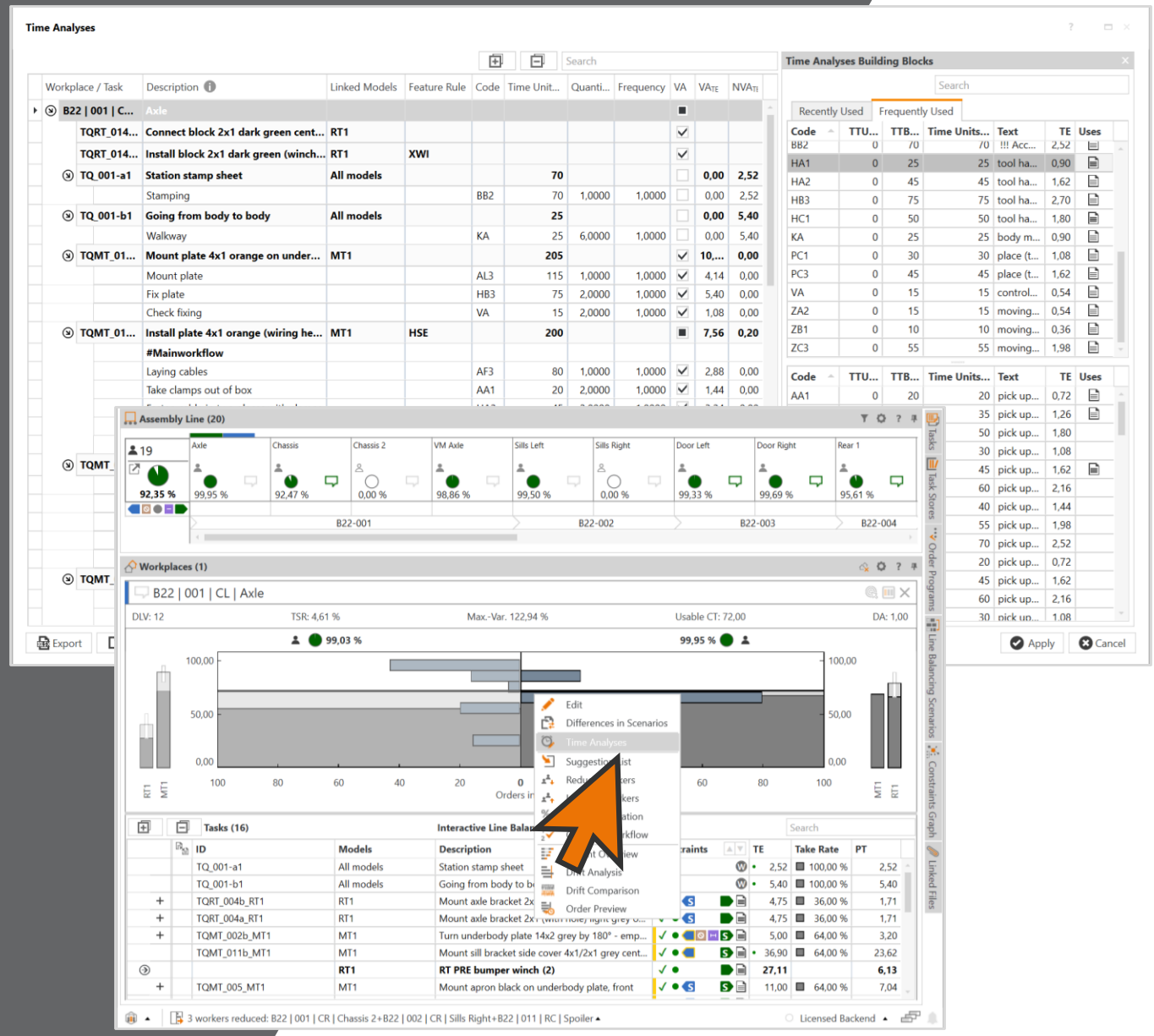
- Simulation based on different forecasts
- Detailed analysis of order variants incl. frequencies and correlation of features
- Buildability always guaranteed, as only existing order variants are used

Record-Breaking Processing Power

Mathematical optimization technology generates order program according to targets with minimum deviation

Perfect Addition

Evaluate the effect of alternative order programs in combination with the modules line balancing and optimal sequencing rules



Time Management

Define time requirements for tasks easily with time modules and recognize added value

Benefits – Time Management

Your Result

Time Management and Line Balancing in One

Time Modules Defined Centrally

Clear and Understandable

Uniform Time Measurement

- Define modules and analyses centrally and use them on tasks
- Centrally define performance level as well as surcharges and discounts
- Define and analyze value added and non value added

Faster to the Goal

- Combined use of estimation times and time analyses
- Fast identification of missing time analyses and active estimation times
- Transparent and comprehensible presentation

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Work Simpler

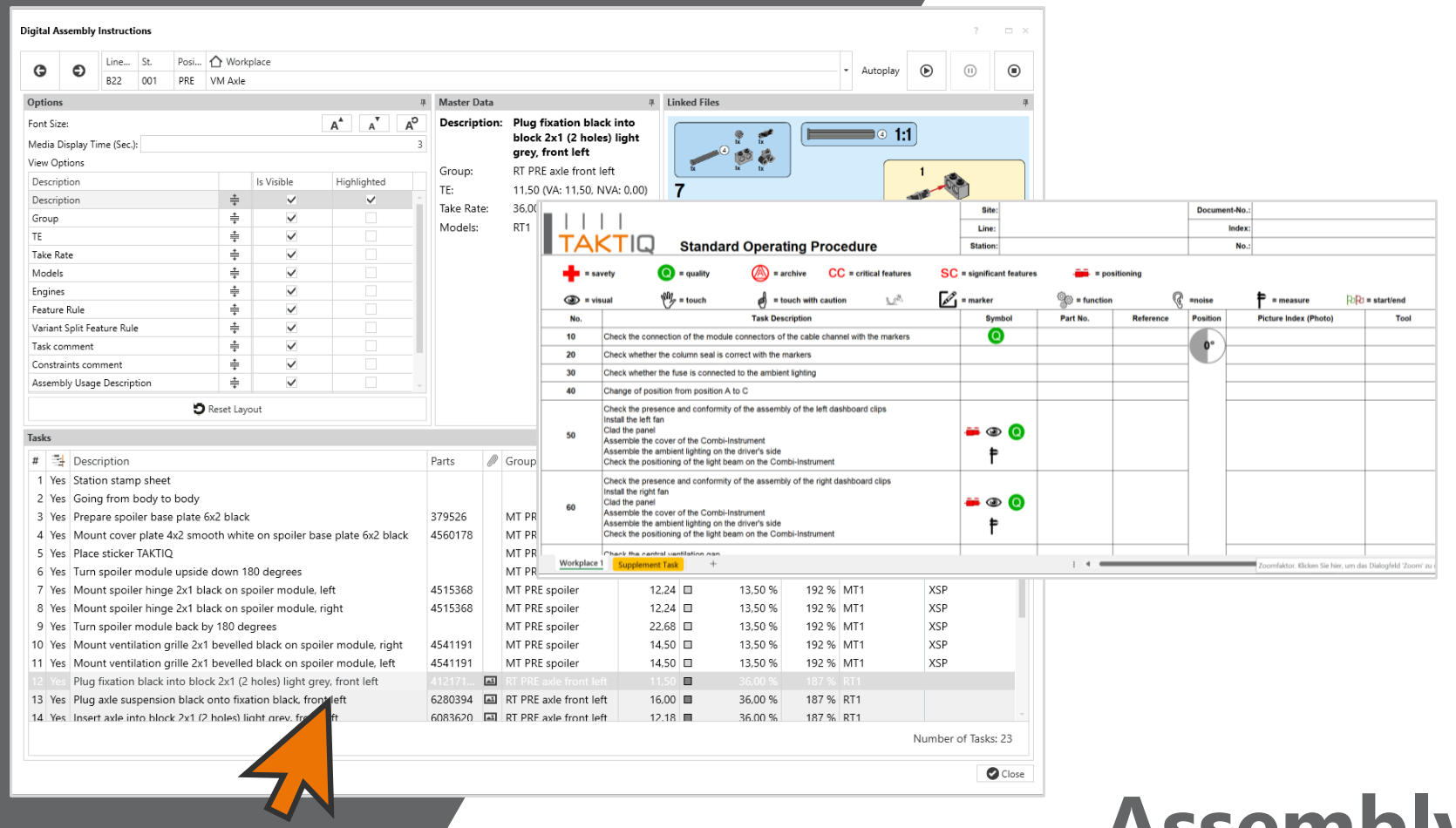
- Easy maintenance both at the task and across a workplace or the entire line
- Fast reuse of blocks that were used last or frequently
- Drag & drop of blocks to new time analyses lines
- Format comments and headings within time analyses

Define Own Standards

Working with any (also individual) modular systems (e.g. UAS)

Live Adjustment

Live update of all time analyses in case of adjustments of time analyses building blocks



Assembly Instructions

Communicate planning results to production via Excel or PDF and train workers with digital assembly instructions in the AssemblySuite™

Benefits – Assembly Instructions

Your Result

Save Time in the Long Run

Secure and Pass On Knowledge

Generate Work Instructions Automatically

Easily Train Production

- Autoplay for qualification with images and videos
- Flexible customization of the interface and displayed attributes as needed
  (shown content, font sizes, image representations)

Customize to Own Needs

- Individual format template with e.g. company- and country-specific language, design, logos
- Completely individual specifications of attributes (torques, tools, icons for sensitive or dangerous activities, etc.) as well as information on the document (inspector, version, releaser, etc.)
- Placement of images on extra pages according to specifications

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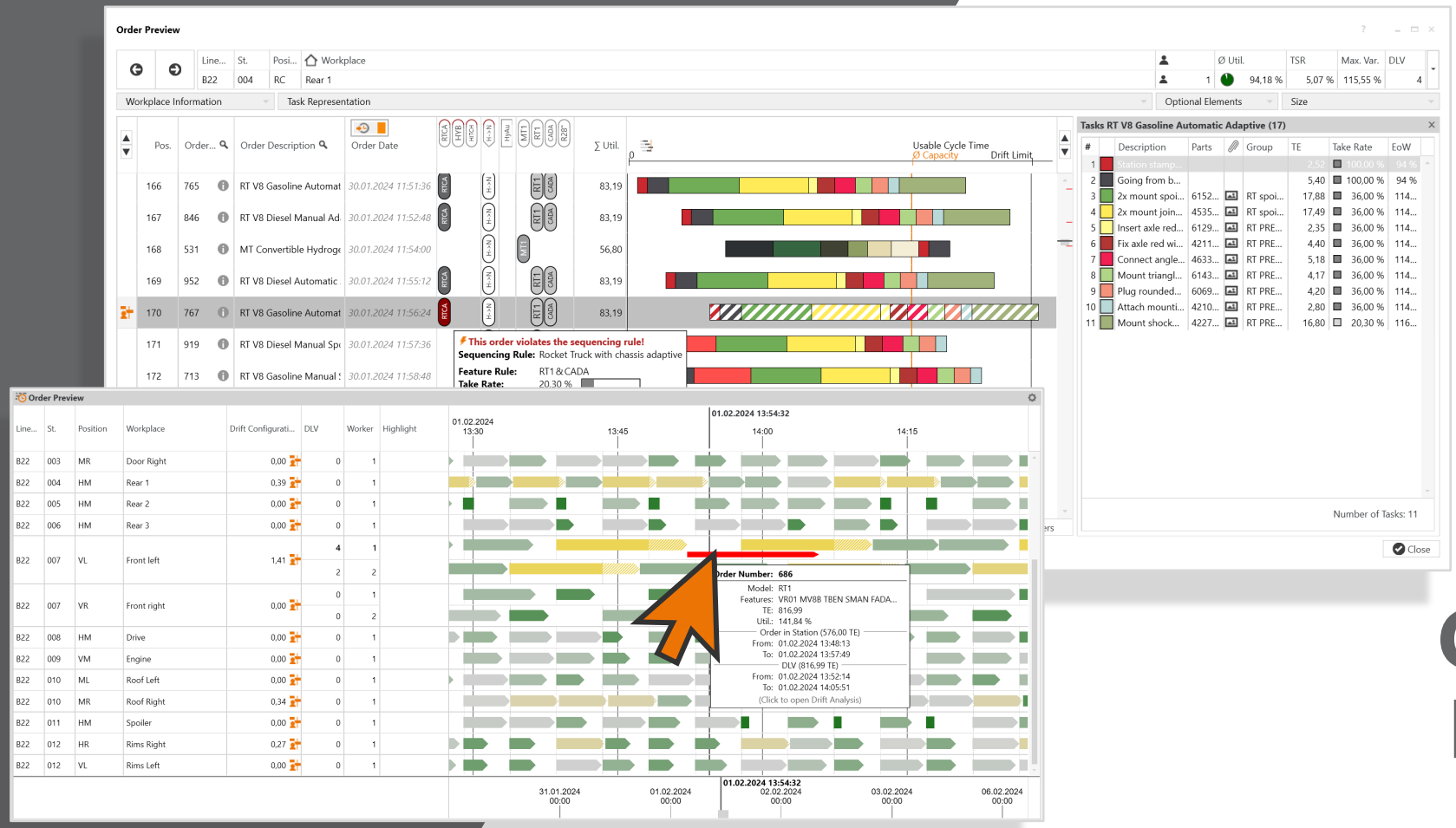
Generate Work Instructions Automatically

- Automatic adjustment of assembly instructions after moving tasks or adjusting avos and workplaces
- Constantly updated illustration of the sequence at the workplace by linking tasks with images
- Summary and highlighting of attributes and cells automatically in the document
- Export to Excel or PDF according to individual specifications

One Time Effort, Every Time Benefit

- Information on tasks automatically moves with them when they are moved
- Linked files are available during scheduling, training and export instructions

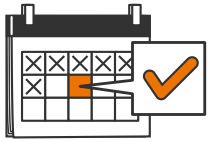


Order Preview Early Warning Mechanism

Secure quantities and ensure smooth production through early detection of bottlenecks and better control of short-term capacity measures

Benefits – Order Preview/Early Warning Mechanism

Your Result



Avoid Bottlenecks

Make Detailed Predictions

Increase Product Quality

React Early

- Live calculation of expected order dates based on real dates
- Feedback from external system or manual specification
- Alert support personnel in a targeted and timely manner

Work and Navigate Intuitively

- Update view live based on current time
- Automatically enter at the beginning of the shift with the appropriate data
- Flexible zoom of the view
- Display detailed contents and drift behavior of an order on demand
- Overview through individually marked order types

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Accurately Predict the Timing and Content of Bottlenecks

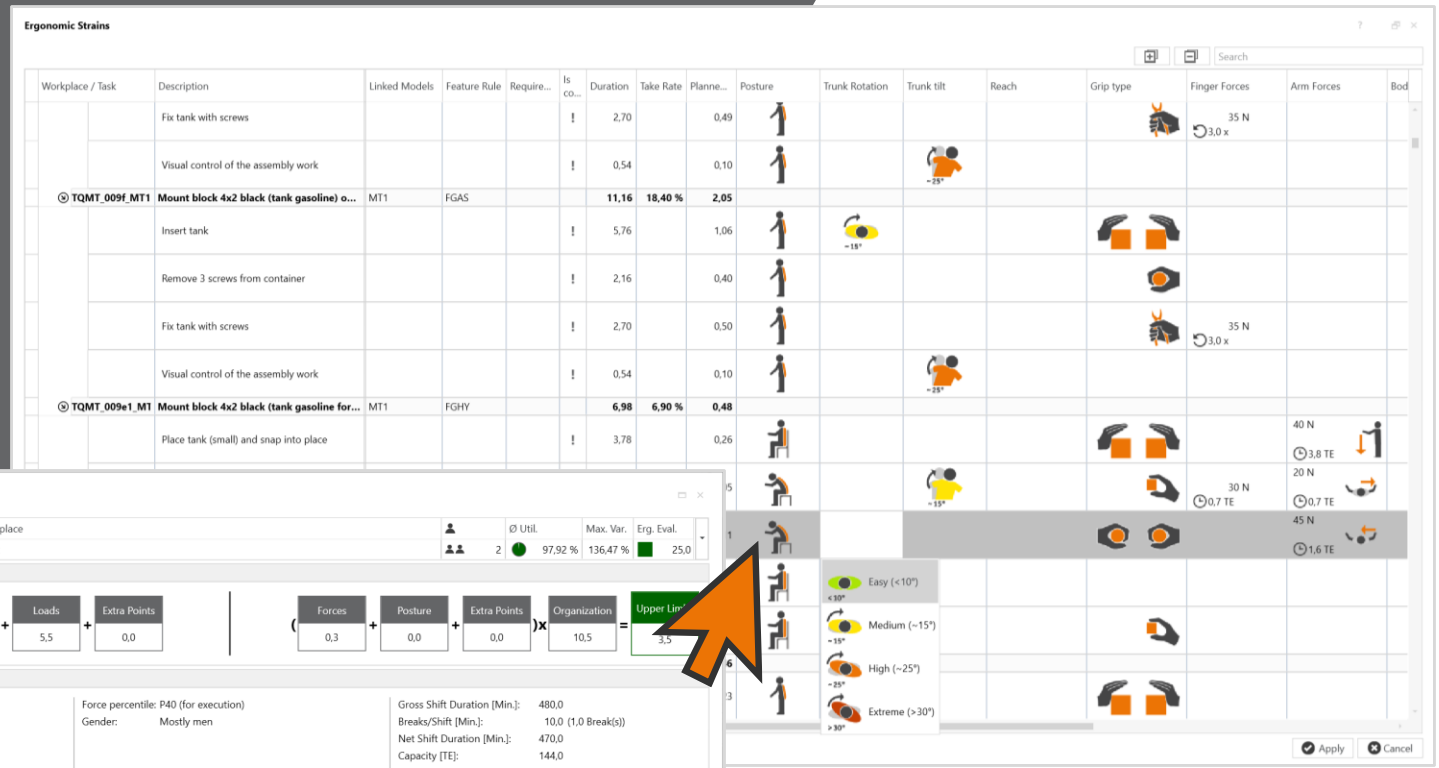
- Pre-calculate job deadlines at each station, taking into account plant structure, shift schedules, break times and disruptions
- Calculate expected drift limit violations based on individual drift configuration per workplace
- Display compliance with or violation of sequence rules

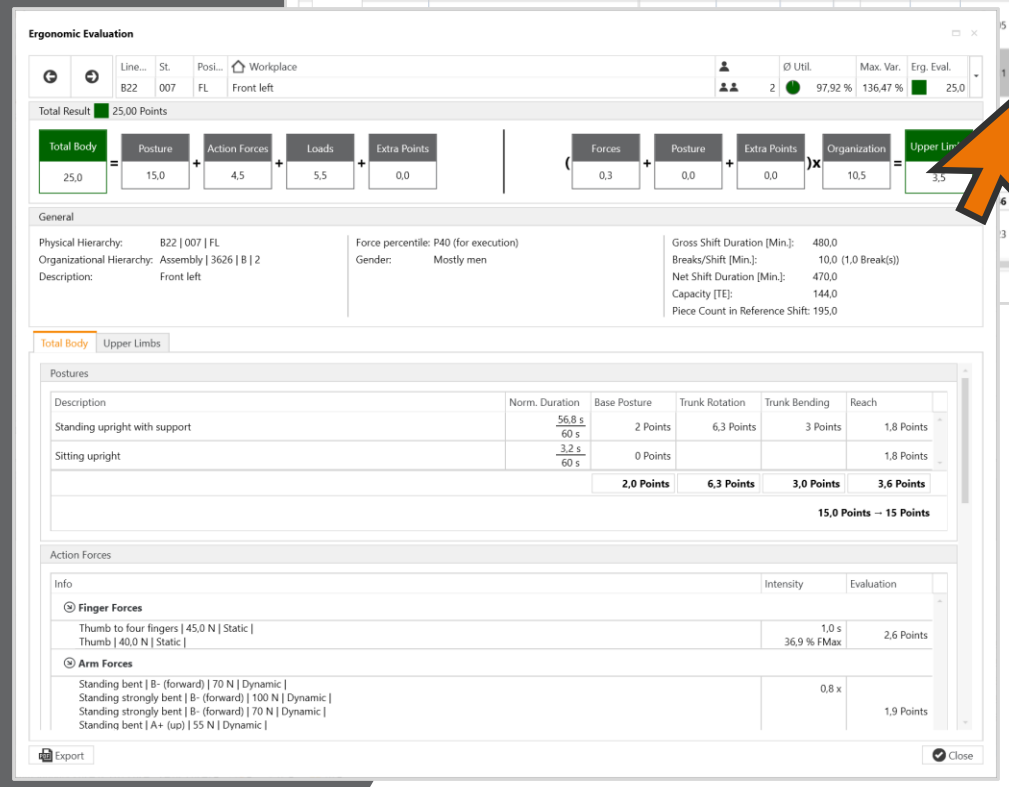
Integrate Data Easily

Integration into MES systems for the transfer of real dates

Beautiful To Look At

Visualization of the detailed drift behavior per workplace





Ergonomics

Determine and optimize ergonomic load per worker and perform live ergonomics assessment during line balancing

Benefits – Ergonomics

Your Result

Certified Ergonomics

Maximum Efficiency & Ergonomics

Rapid Revaluation

Established Standards

- Assessment of ergonomic loads of workers by EAWS® or individual assessment methods of our customers.
- First company to be officially certified as EAWS® compliant by the German MTM Society

approved by MTM ASSOCIATION

Automatic Line Balancing

Automatic line balancing procedures take ergonomic limit values into account (point or traffic light system)

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Realizable Workshop Results

- Integrated evaluation of ergonomics when developing new line balancing solutions.
- Better solutions and shorter planning time through direct live assessment of the ergonomic impact of each change (shift of tasks, order program, cycle time or shift schedule change)

Interactive Line Balancing

- Suggestions for shifting tasks with live calculation of resulting ergonomic effects.
- Achieve highest efficiency & ergonomic goals!

Faster (Re)Evaluation

- Documentation of ergonomic loads at the tasks level and simultaneous assessment of ergonomics at the workplace level
- Reuse of all determined ergonomic loads at tasks

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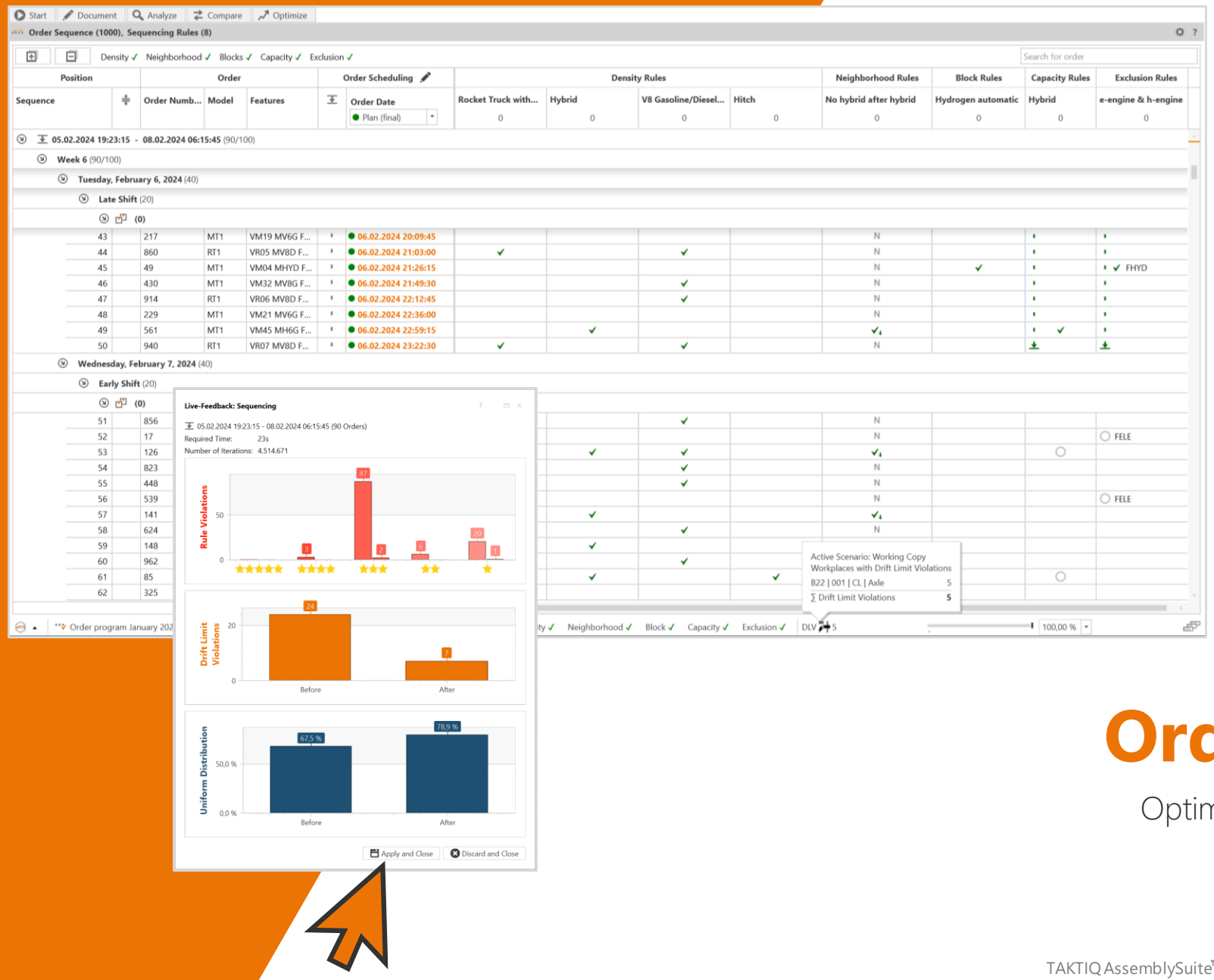


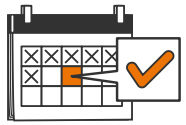
Order Sequencing

Optimal production sequence of orders for efficient and smooth production

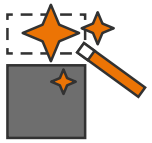
Benefits – Order Sequencing

Your Result

Maximum Efficiency



Smooth Production



Reduced Planning Effort

One Click for The
Optimal Order Sequence

- Reduce manual effort to a few minutes
- Sequence automatically in seconds
- Adhere to even demanding sequencing rules and ensure smooth production
- Different rule types possible (density, neighbor, exclusion, capacity, position, block)

Minimize Bottleneck Situations

- Ensure even distribution of the workload of a wide range of variants
- Precisely simulate and compare scenarios
- Integration of additional modules possible (optimal sequencing rules, early warning mechanism, ...)

Permanent Technical Pioneer

- You always remain highly innovative through our agile development process
- Regular updates with new features are inspired by impulses from our customers

Learn Quickly, Plan Intuitively

- Clear and easy to understand visual representations
- Modern user-friendly interfaces
- Quickly create and deliver significant reports
- Flexible interfaces to existing systems (order management, ERP, ...)

Generate, Communicate and Meet Deadlines

- Create work calendars with your own shift schedules
- Scheduled appointments are generated immediately by linking order sequence and work calendar and updated live in case of changes
- Pass on appointments via interface or Excel export
- Simple comparison of planned, target and actual dates

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Business Case With 25 Workplaces – Order Sequencing

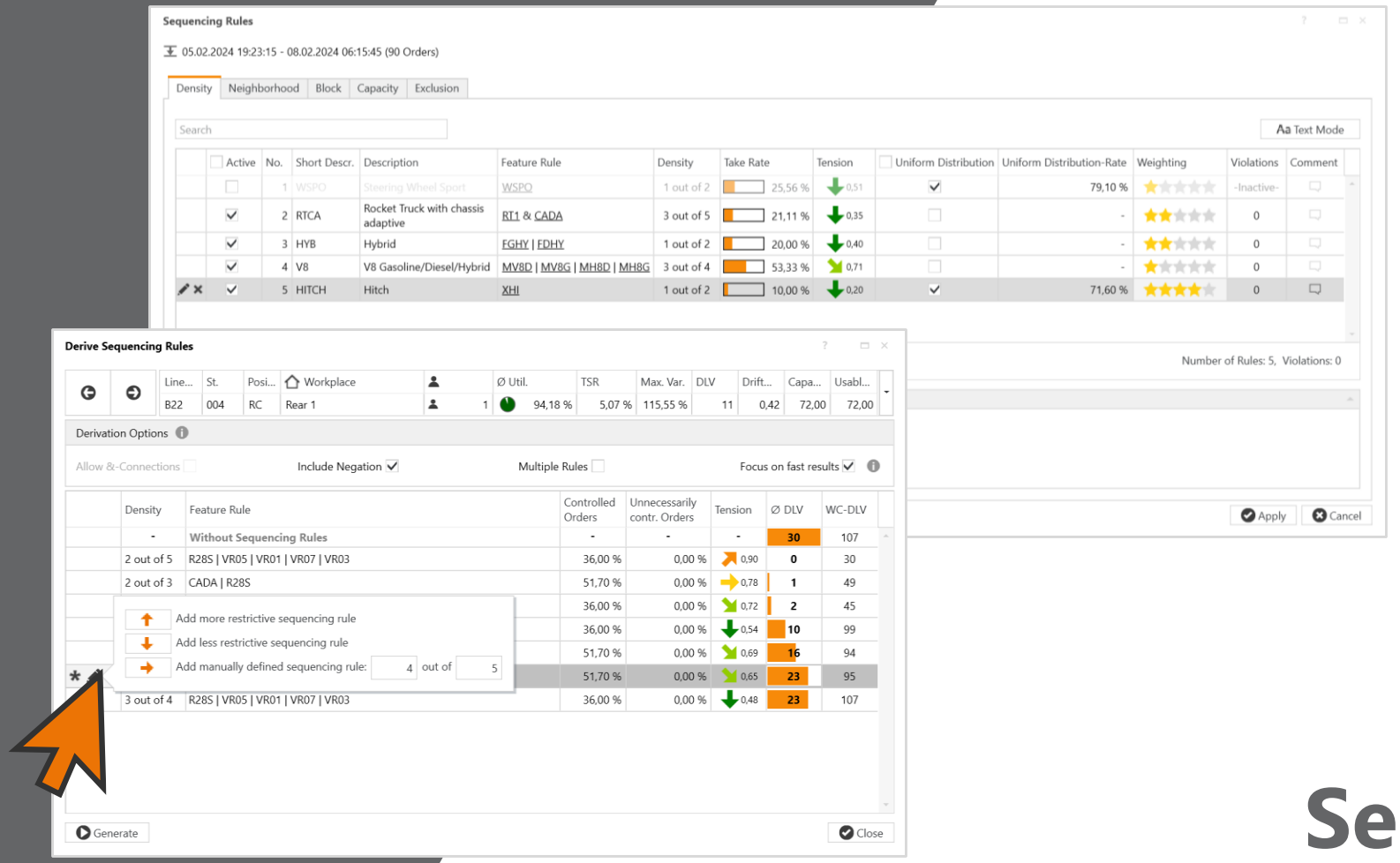
Production per year:	**Before**	**With AssemblySuite™**	
Workplaces	25		25
Production days	220		220
Bottleneck situation **per day**	50	▼ 76%	12
Ø Effort **per day** for rework, support and line stops	48 h	▼ 50%	24 h
Ø Effort for rework, support and line stops	10.560 h	▼ 50 %	5.280 h
× Hourly rate supporter		35 €	
Production costs per year	369.600 €		184.800 €

Planning per year:	**Before**	**With AssemblySuite™**	
Evaluated sequences **per day**	1.000	▲ 9.999.900%	100.000.000
Sequencing rules considered	10	▲ 900%	100
Effort **per order sequence**	6 h	▼ 92%	0,5 h
Necessary final sequences	220		220
Necessary hours for sequencing	1.320 h	▼ 92%	110 h
× Hourly rate planner		40 €	
Management costs per year	52.800 €		4.400 €

i Data based on empirical values of previous use cases.
Savings vary depending on size and characteristics of production.

Saved costs:
-233.200 €

▼ 52%



1 : 3

Optimal Sequencing Rules

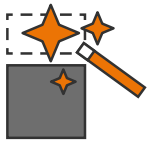
Create sequencing rules analytically, verify effectiveness and optimize

Benefits – Optimal Sequencing Rules

Your Result

Optimal Production Sequences

Smooth Job Scheduling Process



Increased Responsiveness

Valuable Information in Seconds

- Simulate 1000 order schedules in a few seconds
- Evaluate sequencing ability and expected impact of rule sets on bottlenecks in production
- Obtain well-founded predictive ability for "what-if" scenarios

Interactive Rule Derivation

- Recognize control-relevant order features and feature combinations for program planning and sequencing
- Derive distance rules automatically
- Recognize control-relevant orders and automatically describe them with rules
- Recognize maximum take rate for critical features

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Get an Overview and Use It

- Transparency about limit values of the own production
- Recognize and react to bottlenecks and potentials at an early stage

Reduce Rules, Increase Quality

- Avoid unnecessary rules with overlap and effect analyses
- Rule sets can always be sequenced

Making Versatile Use of Findings

Receive recommendations for adjustments to line balancing and sequencing parameters

Your Advantages With the AssemblySuite™

- Use and exploit production capacities safely
- Precisely simulate and compare planning scenarios
- Smoothly map and plan interrelationships
- Create significant reports easily
- Modern and user-friendly interfaces
- Clear and comprehensible visual representations
- Easy and intuitive to use
- Language selection enables native use (German, English, French, Chinese, Hungarian and Italian)

Your Advantages With TAKTIQ

Used by Renowned Customers Worldwide

Certified Company

Regular Exchange of Best Practices

Individual Solutions for Your Production

Permanent Updates and Improvements

Solving Problems Within a Day

Comprehensive User Manual

Direct Support by E-Mail and Telephone

3 Ways To Integrate the AssemblySuite™ Into Your IT Landscape

Excel Im-/Export

Do you want to **test everything first** before investing in a long-term interface?

Simply export our Excel template directly from the AssemblySuite™, enter your data in the selected columns and import it again. We will be happy to help you!

Schedule Appointment

Standard Interfaces

Connect your IT landscape **yourself, quickly and easily** with AssemblySuite™ thanks to our standard interfaces.

With our sample interfaces, your IT team can get an idea of the scope and structure.

Open Sample Interfaces

Other Interfaces

We have already implemented interfaces to systems such as **Ticon, SAP, Windchill** and over 10 other customer-internal systems.

We are also happy to program an interface to **ema, halocline, Siemens Teamcenter** and other systems on request.

Schedule Appointment

Open Questions?
These Documents Will Help You!

Service Specifications

What product combinations and services does TAKTIQ offer?

How is the price calculated?

Open PDF

Product Development Agreement

What is the development process for an AssemblySuite™ extension?

What is the pricing for such a development?

Open PDF

System Requirements

How does the installation work?

What requirements does my IT have to meet?

Open PDF

More Questions

Which address should I contact if I have further questions?

Write E-Mail

TAKTIQ

AssemblySuite™

Bring your Produktion in Einklang!

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