fast SUITE
edition 2 focus on efficiency

cenit

Release Notes
R2026.1

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UX IMPROVEMENTS: SMOOTHER WORKFLOWS, LESS FRICTION

Customer Problem:

Users frequently encounter interruptions in their workflow due to inconsistent navigation, unclear UI elements, and unnecessary complexity in routine tasks. These friction points not only slowed down operations but also increased the likelihood of errors, especially in high-stakes environments like robotics control and industrial machining.

Our Solution:

This UX Epic focused on identifying and eliminating key sources of disruption across the user interface. We've made targeted improvements to:

- Unify UI components for a more consistent and intuitive experience
- Streamline navigation to minimize clicks and cognitive load
- Helper functions to reduce friction is using the application

Your Benefit:

These enhancements result in smoother user experience, allowing operators, programmers, and engineers to stay focused on their tasks without being distracted by the software. The outcome: faster execution, fewer errors, and a more productive workday.

EFFICIENT SEQUENCING OF LARGE-SCALE POINT-BASED PROCESS GEOMETRIES

Customer Problem

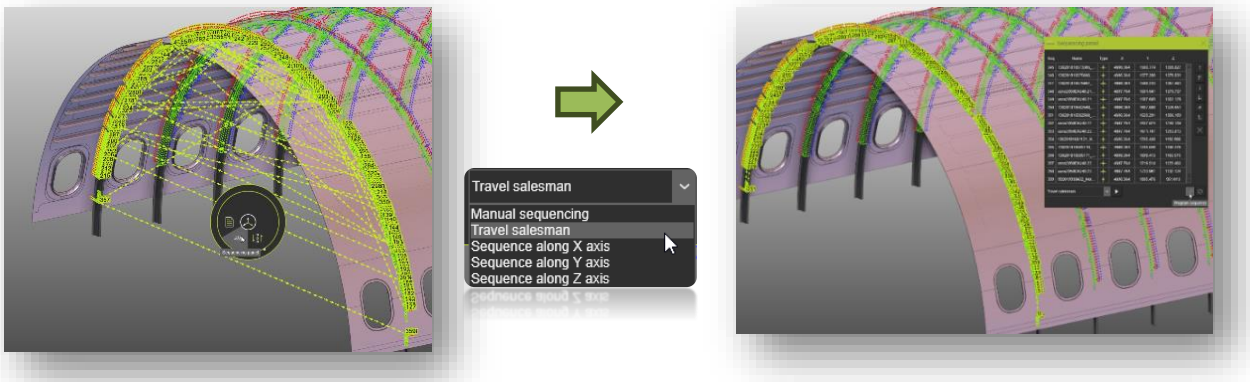
Large programs routinely contain thousands of point-based Process Geometries (PGs) that must be grouped and executed in an efficient, manufacturable order. Manually arranging these points across multiple groups and operations is slow, error-prone, and hard to repeat at scale.

Our Solution

A new **Sequencing panel** streamlines grouping and sequencing of point-based PGs. Users select one or more PG groups, define start and end PGs, and let the system compute an optimized order (e.g. Travel salesman). The sequence can then be fine-tuned via intuitive drag-and-drop or inverse function before operations are generated. The dashboard centralizes all sequencing functions and is open for custom optimization logic via Python.

Your Benefit

- Faster planning: Collapse hours of manual ordering into minutes with automatic sequencing.
- Better programs: Choose optimization criteria that minimize distance or align with shop-specific rules.
- Less complexity: One clear dashboard to select PGs, run optimization, and adjust by hand.
- Future-proof: Extensible optimization types let you embed proprietary logic without changing core code.



NEW SEQUENCING PANEL FOR EFFICIENT CONTOUR AND REGSHAPE ORDERING

Customer Problem

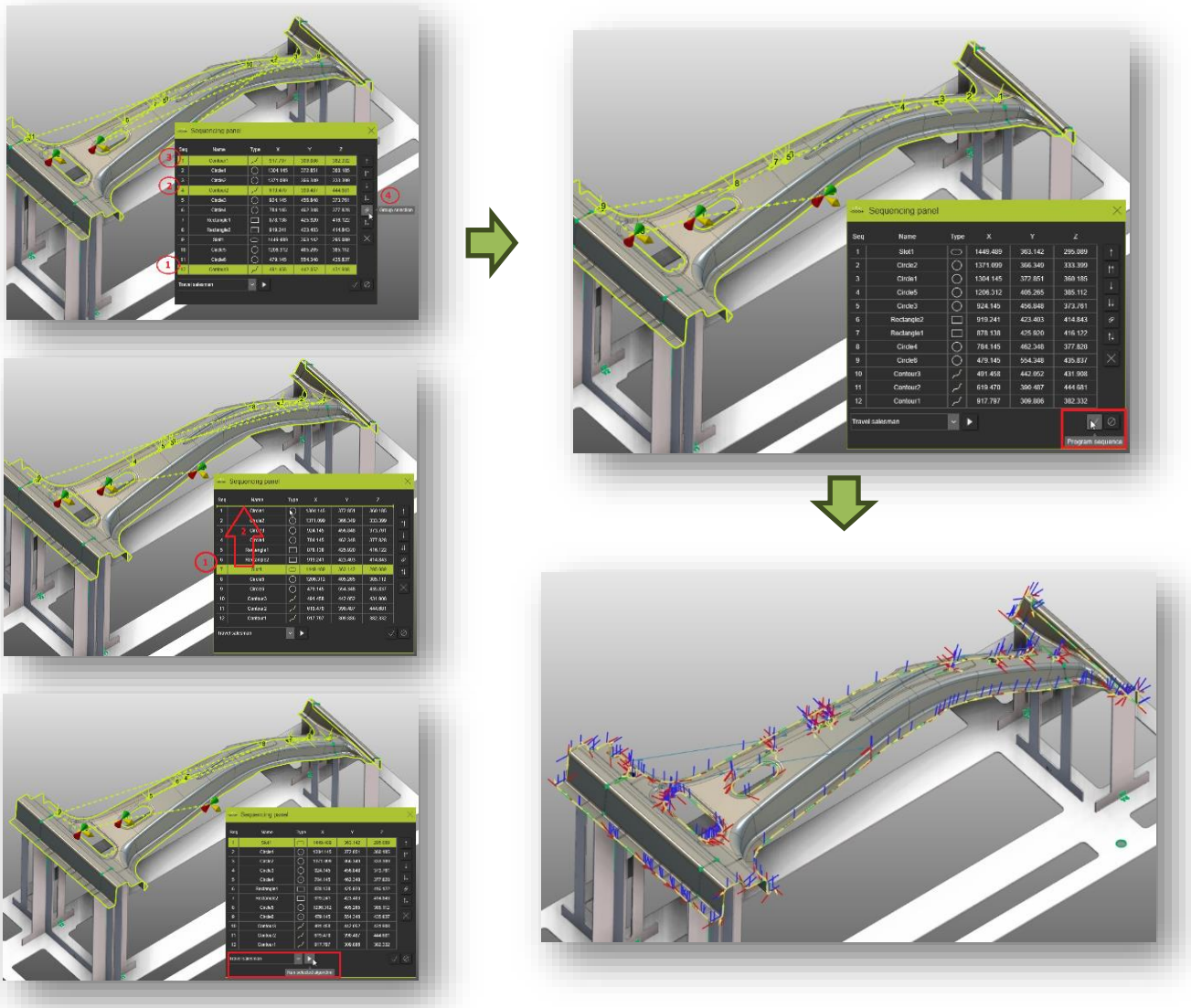
In laser-cutting programs, engineers deal with many Contour and RegShape process geometries. They need to target inner vs. outer contours, choose first/last PGs, and get an efficient traversal across all PGs—without losing the ability to manually adjust the order quickly (move up/down, move to start/end, invert or group).

Our Solution

A dedicated Sequencing Panel streamlines grouping and sequencing of Contour and RegShape PGs. Users select one or more PGs, define start and end PGs, and let the system compute an optimized order (e.g. Travel salesman). The sequence can then be fine-tuned via intuitive drag-and-drop before operations are generated. All sequencing functions are centralized in one place and can be extended with custom optimization logic via Python.

Your Benefit

- Faster planning: Collapse hours of manual ordering into minutes with automatic sequencing.
- Faster programming: One panel for selection, optimization/reordering, manual edits, operation generation.



PROGRAM ONCE. RUN ANYWHERE- MACHINE SWAP

Customer Problem

Modern production environments often operate with mixed machine and robot fleets, and this creates practical challenges:

- The final machine or robot brand is not always known at programming time.
- Machines must sometimes be swapped late in the process due to maintenance, load balancing, or outsourcing.

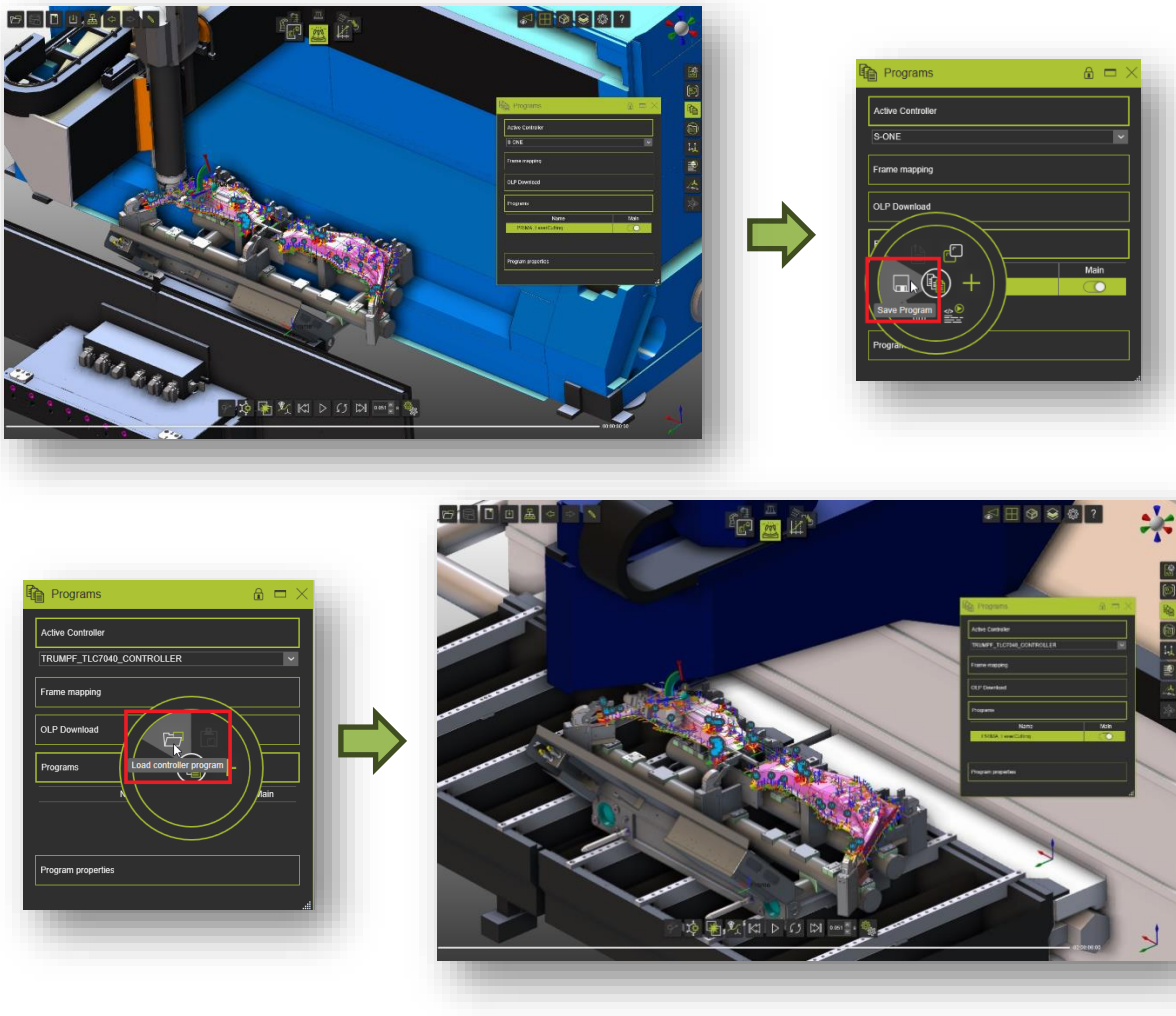
Our Solution

Freedom to Switch Machines — Without Reprogramming. FASTSUITE separates the machining logic from vendor-specific implementations. This enables:

- Seamless retargeting of programs across different brands (e.g., TRUMPF → PRIMA).
- Preservation of toolpaths, structure, events, and semantics.
- Automatic mapping of vendor-specific attributes and controller differences.

Your Benefit

- True flexibility in heterogeneous production environments
- No reprogramming effort when switching machines
- Consistent, validated programs through automated synchronization
- Reduced manual work, fewer errors, and faster response to changes
- Sustainable investment, independent of machine vendor choices



ADD MULTIPLE SUB-PROGRAMS AT ONCE – FASTER PROGRAM CREATION

Customer Problem

Building a main program often requires adding multiple sub-programs.
Previously, users had to select and add each sub-program individually. This repetitive process slows down program creation, interrupts the workflow, and increases the risk of missed or incorrect selections, especially in complex or large program structures.

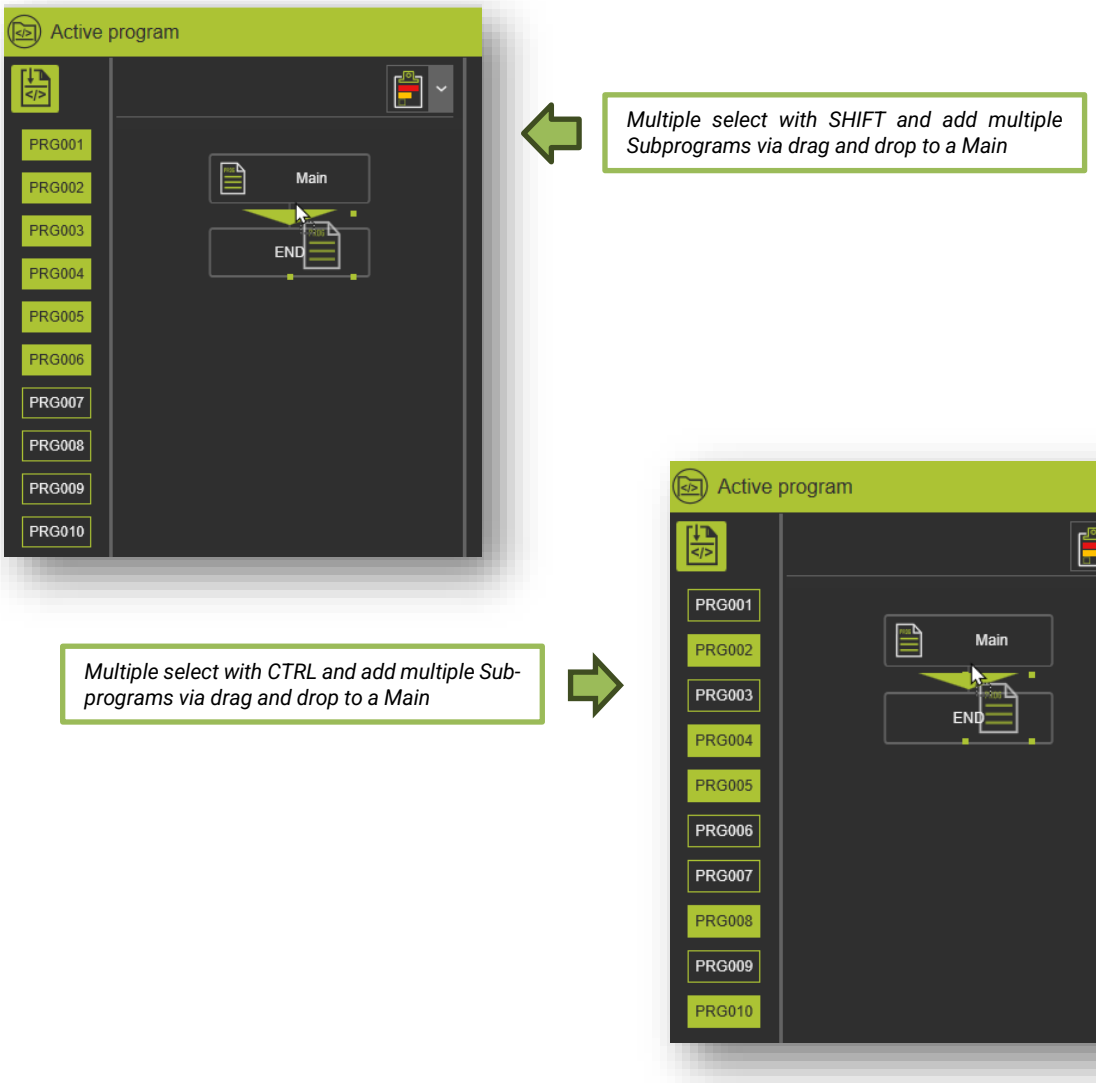
Our Solution

With the new multi-select sub-programs functionality, users can select several sub-programs at once and add them to the main program in a single action.
This UX enhancement integrates seamlessly into the existing interface and supports a faster, more intuitive way of composing programs.

Your Benefit

- Significantly reduced effort when creating or restructuring programs
- Faster workflows through multi selection instead of repetitive actions
- Improved usability with a modern, intuitive interaction concept
- Lower risk of errors when working with complex program hierarchies

Result: you spend less time managing program structures—and more time focusing on efficient programming and optimization.



OPTION TO LOCK DASHBOARDS BY DEFAULT

Customer Problem

When dashboards are opened for the first time, they are unlocked by default. This requires users to manually move each dashboard to the desired position before it is fixed, adding unnecessary effort.

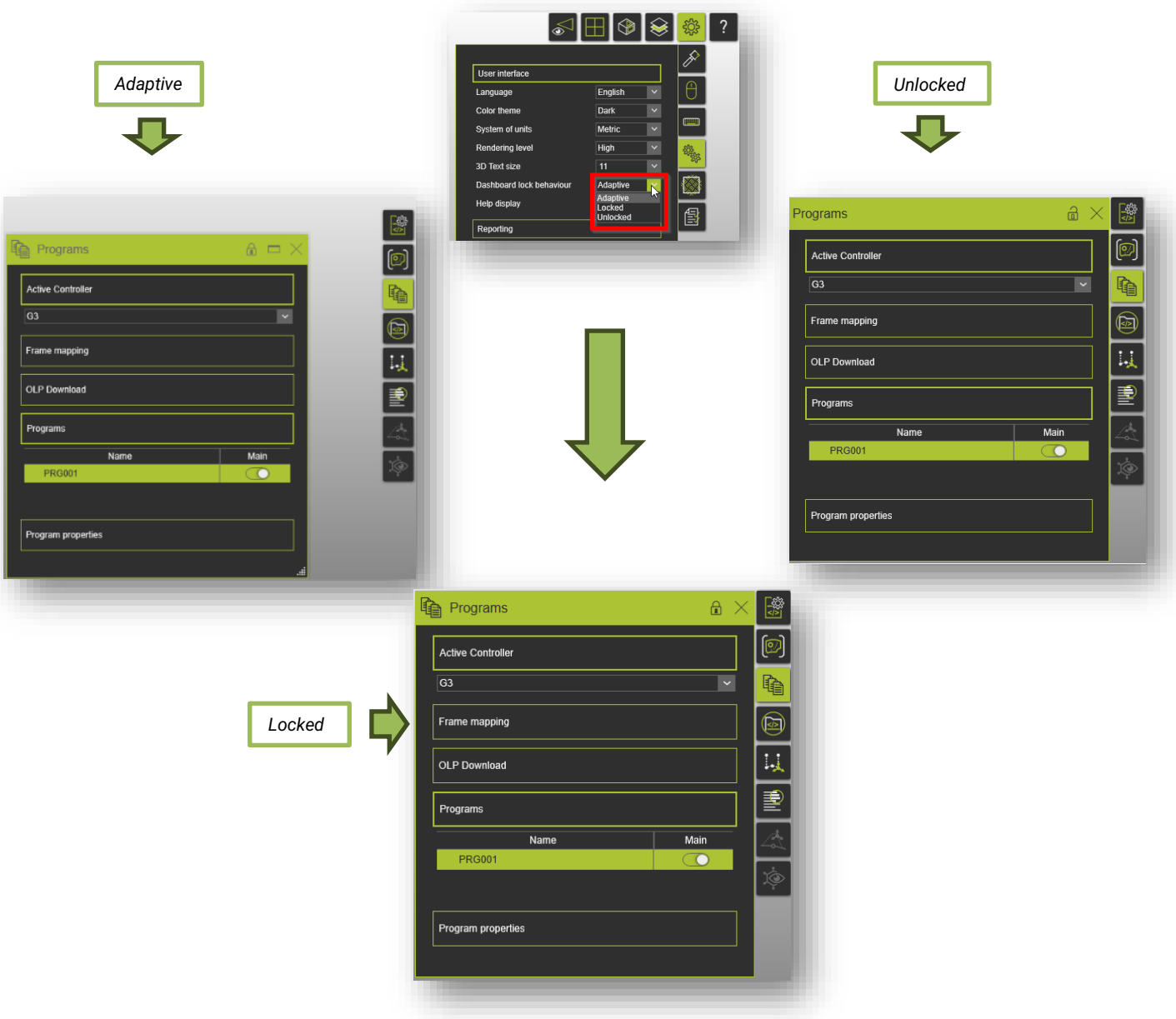
Our Solution

The “Lock Dashboards by Default” option gives you full control over how dashboards are opened. You can define in the settings whether dashboards should open already locked on first use, ensuring their position stays fixed from the start.

Your Benefit

- No manual action required to lock dashboards
- Consistent dashboard positioning from the first opening

With default locking, dashboards stay exactly where they belong—stable, predictable, and easy to use.



DEFAULT PTP AND LIN VELOCITY FOR FIRST TOOLPATH ELEMENT

Customer Problem

At the start of a robot program, critical motion parameters such as speed and accuracy must be correctly defined before the first movement. In practice, these settings were often incomplete, inconsistent, or manually added per path type. Missing or incorrect start conditions could result in unpredictable robot behavior, reduced process quality, or additional rework—especially when switching between PTP and LIN motions in precision-critical applications like welding, cutting, or inspection.

Our Solution

With Program Start Conditions, the system now automatically applies predefined default motion parameters at the beginning of every program, covering both PTP and LIN movements.
Program Start Conditions include:

- Default PTP feedrate, accuracy mode, and accuracy
- Default LIN feedrate, accuracy mode, and accuracy

These parameters are inserted automatically before the first toolpath element and adapt dynamically when the program is edited. Central configuration ensures consistency across programs, while users can still override values at the toolpath level when needed.

Your Benefit

- Predictable startup behavior for both PTP and LIN motions
- Reduced setup effort with no need to manually define initial motion parameters
- Higher process reliability through consistent speed and accuracy from the first move
- Fewer programming errors caused by missing or misplaced motion settings

MULTIROBOT WITH ONE EXTERNAL AXIS –LEADER/FOLLOWER DEFINITION IN TEAM LAYOUT FOR SIMULATION

Customer Problem

In multirobot cells where multiple robots share one external axis (e.g. a rotary axis), only one robot typically controls the external axis logic, while other robots follow as follower.
Without explicitly defining these roles in the simulation layout, users face:

- Ambiguous responsibility for external axis motion
- Unrealistic or inconsistent multirobot behavior in simulation
- Increased risk of misinterpretation during feasibility, reachability, and collision studies

This makes it difficult to accurately simulate real-world controller behavior and can lead to issues during later commissioning phases.

Our Solution

We enable an explicit Leader/Follower definition directly in the Team Layout for simulation.
The master robot is defined as the single controller responsible for the external axis, while slave robots operate without direct knowledge of the external axis.
This relationship is configured via a Motion Controller user attribute, ensuring a clear kinematic and control hierarchy in the simulation:

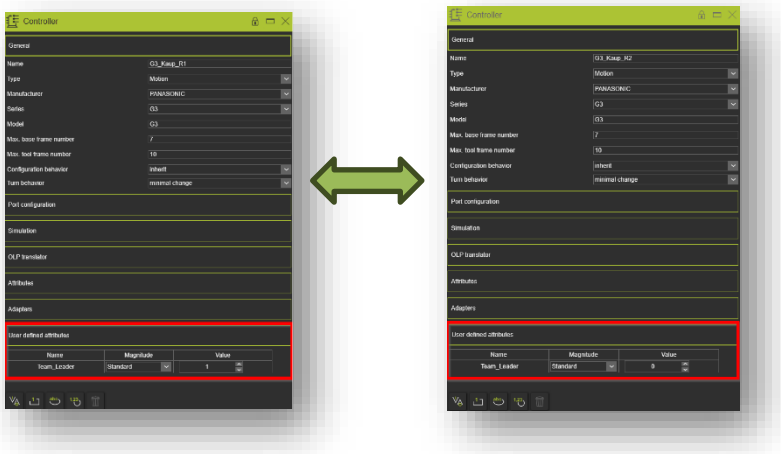
- Leader
  - Controller User Attribute: Team_Leader = 1 (Integer)
- Follower
  - Controller User Attribute: Team_Leader = 0 (Integer)

This setup reflects real controller behavior and ensures that all external axis motion is consistently handled by the leader robot, while follower robots follow the resulting motion.

Your Benefit

- Realistic multirobot simulation with a shared external axis
- Clear responsibility model for external axis control
- Improved reliability of feasibility, reachability, and collision checks
- Reduced simulation setup ambiguity for complex robot cells
- Higher confidence when validating layouts before download and commissioning

By mirroring real-world leader/follower controller behavior, this feature helps you simulate complex automation cells more accurately and avoid downstream integration issues.



Limitation

- This feature supports scenarios where the external axis position remains constant during the process (e.g. during welding).
- Dynamic changes of the external axis during the process are currently not supported in this master/slave simulation setup.

AUTONOMOUS PROGRAMMING

This Epic introduces advanced automation capabilities to minimize manual intervention and accelerate programming workflows. It focuses on intelligent sequencing, path optimization, and collision-free strategies to ensure efficiency and safety across multiple processes.

EXPANDED PYTHON API FOR WORKPIECES, RESOURCES, AND FRAME CONTROL

Customer Problem

Customers who rely on Python scripting for automation and customization need deeper and more consistent access to core data structures within the system. In particular, limitations in accessing workpiece and resource data, as well as tool and base frame assignments at operation level, make it difficult to implement robust automation, reporting, and advanced customization workflows.

Our Solution

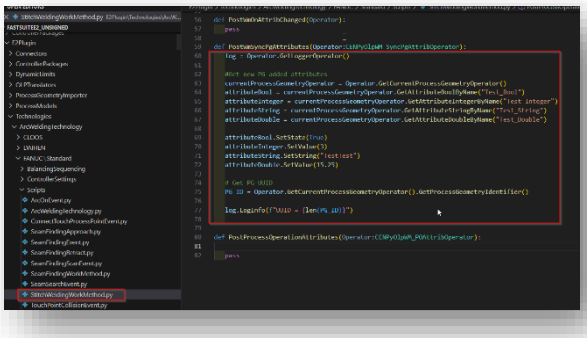
The Python API has been extended with new capabilities to improve access, control, and usability across key system entities. The enhancements include:

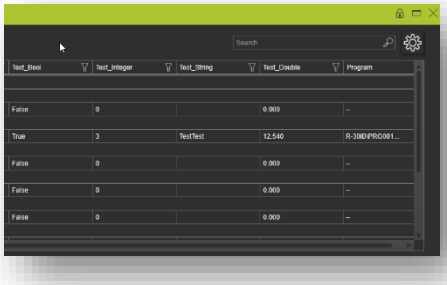
- Read/write access to selected workpiece data, including object attributes and Process Geometry (PG) attributes
- Read/write access to selected resource details, covering general data, kinematics, adaptors, frames, and user-defined attributes
- APIs to retrieve frame details and to set and change tool- and base frames for operations

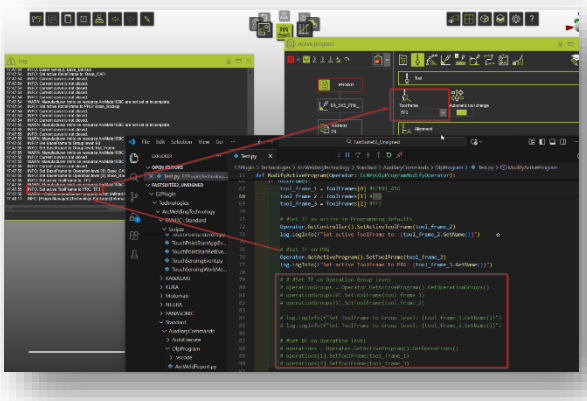
In addition, IntelliSense support and API documentation are being updated to improve developer usability and productivity.

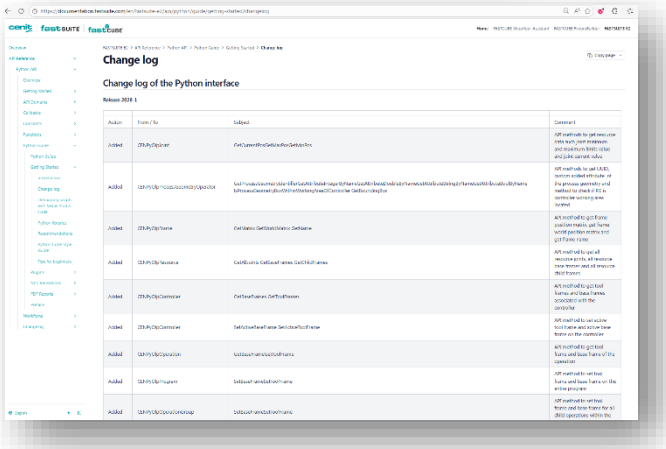
Your Benefit

- Greater flexibility for advanced automation and customization
- Easier implementation of custom logic, reporting, and validation workflows
- Reduced scripting effort through better API discoverability and documentation
- More reliable and maintainable Python solutions across projects









SMOOTHER, MORE EFFICIENT POINT-BASED ROBOT PATHS THROUGH INTELLIGENT MOTION OPTIMIZATION

Customer Problem

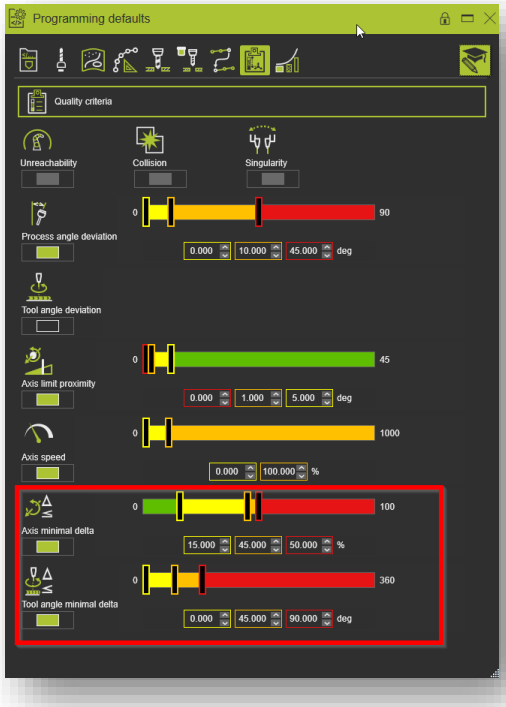
Automatic Path Optimization (APO) and Automatic Collision-Free Link Path Generation (ALG) for point-based technologies—such as Non-Destructive Testing (NDT), spot welding, drilling, and riveting—often result in unnecessary robot axis movements and abrupt tool orientation changes between consecutive points. This can lead to inefficient motion, reduced path stability, and less smooth transitions.

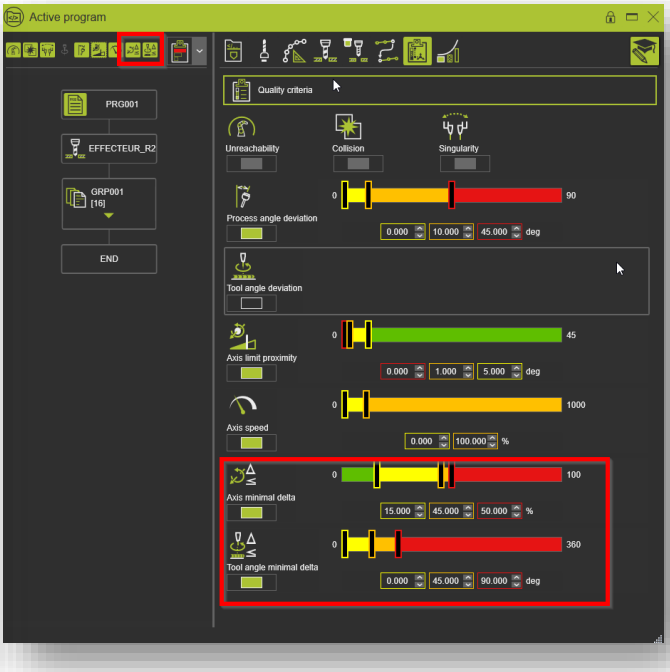
Our Solution

New cost functions have been introduced for point-based technologies that intelligently optimize robot motion by minimizing axis movements and tool angle changes between consecutive points. By considering both robot kinematics and tool orientation, the system generates smoother and more efficient motion paths.

Your Benefit

- Smother and more stable robot motion
- Reduced unnecessary axis movement and reorientation
- Higher path quality and improved process reliability
- More efficient cycle times and reduced mechanical wear





	Axis minimal delta (point based technology)	Evaluates all robots axes movements on consecutive toolpath elements	Percentage ranges from good to invalid.	The goal is to reduce the change in each axis as much as possible. This is Expert mode attribute
	Tool angle minimal delta (point based technology)	Evaluates tool tangent orientation on consecutive toolpath elements	Angle ranges from good to invalid.	This ensures smoother transitions in tool orientation. This is Expert mode attribute

AUTOMATIC OPTIMIZATION (APO, AARO & ALG) SUPPORT FOR SEALING TECHNOLOGY

Customer Problem

Programming sealing applications has traditionally required significant manual effort. Until now, Automatic Path Optimization (APO), Automatic Axis Reordering Optimization (AARO), and Automatic Collision-Free Path Generation (ALG) were not supported for sealing technology. This made it challenging to efficiently generate optimized, collision-free paths—especially in complex work cells with tight geometries, multiple robots, or sensitive tooling.

Our Solution

We've extended APO, AARO, and ALG support to Sealing technology.
This enhancement enables the system to:

- Automatically optimize sealing paths (APO)
- Automatically optimize Approach and Retract (AARO)
- Generate collision-free linking motions (ALG)

Sealing applications now benefit from the same advanced automation and optimization capabilities already available for other supported technologies.

Your Benefit

With automated path optimization and collision avoidance for sealing, programming effort is significantly reduced while process reliability increases. You benefit from faster setup times, safer robot motion, and consistent sealing quality—even in dense or highly complex production environments. This results in higher productivity, improved process stability, and reduced risk during commissioning and operation.

IMPROVED APPROACH & RETRACT POSITIONS AFTER APO

Customer Problem

With R2025.2.4, FASTSUITE E2 introduced Automatic Path Optimization (APO) with automated approach and retract generation — significantly reducing manual work.
However, in complex or space-constrained cells, the automatically generated approach and retract positions after APO could still require fine-tuning. In some cases, motion transitions were not ideally aligned with the optimized path, leading to unnecessary axis movements, reduced smoothness, or manual adjustments to achieve the desired motion quality.

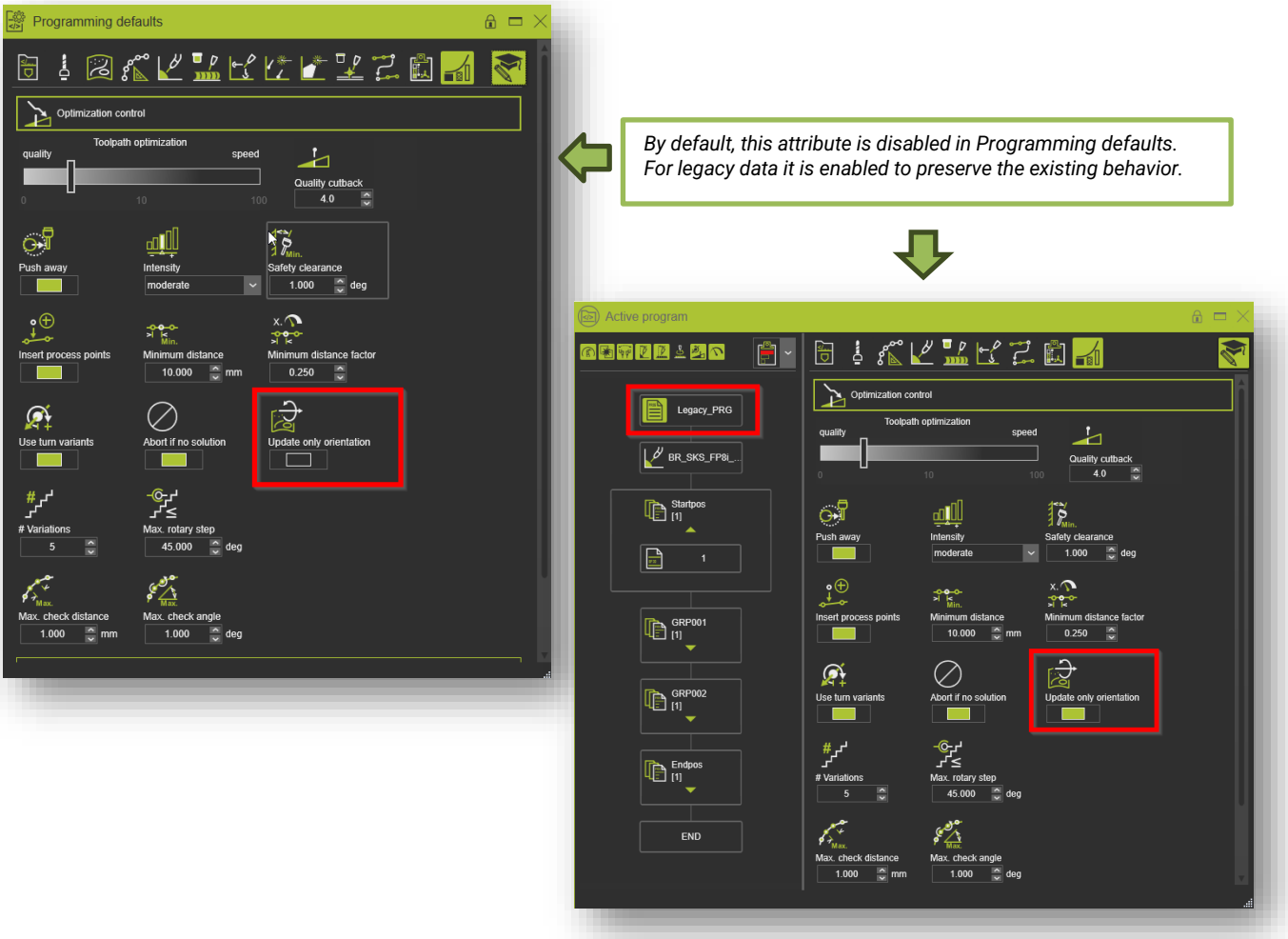
Our Solution

In addition to the actual solution, it further refines the position and orientation of approach and retract motions after optimization, ensuring they are better aligned with the optimized robot path. This add-on enhancement improves how the approach and retracts motions are finalized—without changing the existing APO workflow and without introducing additional setup steps.

Your Benefit

- Even smoother transitions between optimized paths and approach/retract motions
- Higher motion quality with fewer unnecessary robot axis movements
- Less manual fine-tuning, especially in tight or complex cells
- Maximum value from APO, building seamlessly on the R2025.2.4 enhancement

In short, this add-on completes the APO experience by turning already optimized paths into cleaner, more consistent, and more production-ready robot motion.



IMPROVED BASE FUNCTION

This EPIC strengthens the technical foundation of FASTSUITE to ensure scalability, stability, and long-term performance across all technologies and customer environments. By improving core system components FASTSUITE becomes more robust, faster, and easier to extend.
The Infrastructure EPIC does not focus on individual user features, but on making all features work reliably at scale—enabling complex projects, larger programs, multi-controller setups, and future technology extensions while reducing technical risk and operational friction for customers and integrators alike.

AUTOSAVE - AUTOMATIC DOCUMENT SAVE WITH ROLLBACK OPTION

Customer Problem

Unexpected events such as application crashes, system failures, or interruptions during daily work can lead to loss of unsaved progress. Manual saving requires discipline and can easily be forgotten, especially during long or complex workflows. As a result, users risk losing valuable work and productivity.

Our Solution

The system provides an Automatic Autosave & Version Recovery feature that saves the active scenario automatically at configurable time intervals.
Autosave is designed to work intelligently:

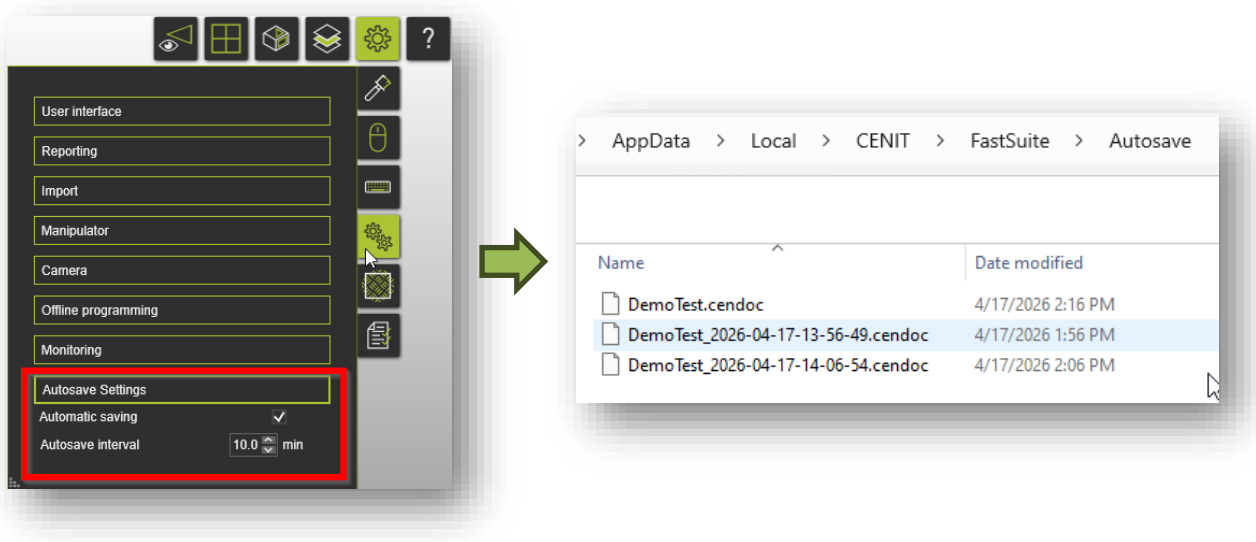
- It avoids interference with computations, simulations, or loading operations
- It stores up to three rollback versions per scenario
- The feature can be enabled or disabled by the user to balance performance needs

Temporary autosave files are securely stored locally and managed automatically by the system.

Your Benefit

- Protection against data loss caused by crashes or unexpected shutdowns
- Peace of mind – progress is preserved without manual effort
- Fast recovery with multiple rollback points available
- Full control over Autosave behavior and performance impact
- No disruption to ongoing calculations or undo history

With Automatic Autosave, users can focus on their work — confident that their progress is always protected.



EFFICIENT MANAGEMENT OF LARGE-SCALE OPERATION SETS - PERFORMANCE IMPROVEMENTS IN OLP

Customer Problem

Modern OLP projects often involve large and complex programs with thousands of operations, extensive parameter sets, and automated workflows driven by plug-ins or scripts.
In such scenarios, users can experience performance limitations in everyday tasks, including:

- Slow response when creating, modifying, or deleting large numbers of operations
- Long evaluation times during collision checking and program validation
- Reduced interactivity when script-based extensions are heavily used

These performance constraints increase iteration times and make it harder for users to work efficiently with large-scale OLP programs, regardless of the application domain.

Our Solution:
We implemented targeted performance optimizations in the OLP core, focusing on scalability, execution efficiency, and responsiveness across typical workflows:

- Select and process PGs in bulk directly from the 3D view or PG Dashboard
- Create and manage large operation groups (50–80 operations per group) with predictable performance
- Seamlessly add, delete, and modify operations, groups, events, and toolpaths
- Work fluidly across APD, TPDB, Event & Teach, Toolpath Editing, and Simulation, even in large programs
- Maintain consistent system responsiveness, regardless of logging level or program size
- Optional High-Performance Plug-In Architecture
  Performance-critical logic can be migrated from scripting to native C++ implementations where appropriate, significantly reducing execution overhead and improving runtime efficiency for large operation sets.
- Optimized Collision Evaluation
  The collision checking process was analyzed and optimized to reduce unnecessary computations, resulting in noticeably faster evaluation times, especially in complex programs with many operations.

Your Benefit

- General Core Performance Enhancements
  Additional internal optimizations improve handling of large programs, grouped operations, and frequent user interactions, ensuring stable and predictable performance across common OLP use cases.
- Faster and more responsive OLP workflows, even with very large programs
- Reduced waiting times during program evaluation and validation
- Improved scalability when working with thousands of operations
- Higher productivity, allowing users to focus on process quality instead of system performance
- A robust foundation for future high-performance extensions and automated workflows
- Faster programming and iteration bulk selection, grouping, and operation handling significantly reduces manual effort and waiting times.
- Consistent performance across roles Identical responsiveness for end users and service users—even with extended logging enabled.
- End-to-end workflow efficiency seamless interaction across operation creation, event handling, toolpath editing, and collision checked simulation.
- Future ready automation platform prepared for advanced sequencing, in-creased automation, and rule based or plugin driven extensions.

These improvements make OLP more efficient, scalable, and comfortable to use across different industries and application scenarios. In particular, automotive, aerospace, and large-scale arc-welding projects benefit from significantly improved scalability and performance when working with complex, operation-heavy OLP programs.

ROBOT & MACHINE SUPPORT

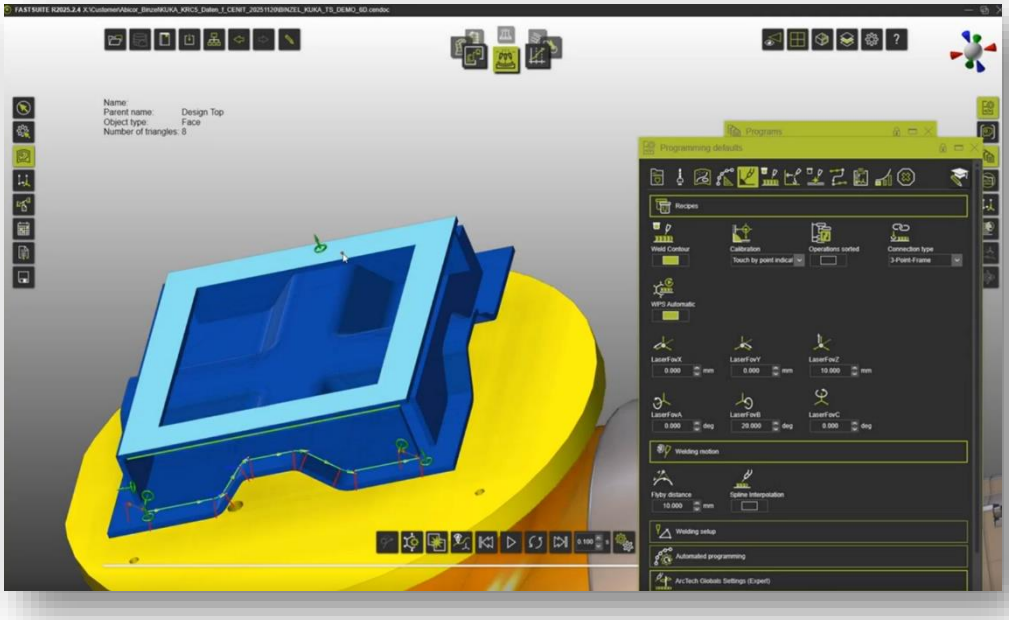
It extends OLP capabilities with integrated support for KUKA seam finding/tracking (6DoF), a production-ready arc welding downloader for ABB, C-frame kinematics, and Neura Lara series robots. These enhancements enable accurate compensation of real-world deviations, reduce customization effort, and accelerate deployment while ensuring reliable, high-quality production.

KUKA SEAM TRACKING / SEAM FINDING

Customer Problem:
Customers struggle to reliably program and compensate for welding paths on KUKA systems when real workpieces deviate from the digital model (shift, rotation, deformation), requiring complex manual setup, deep controller knowledge, and extensive customization of downloaders and scripts.

Our Solution:
We integrated and adapted KUKA Seam Finding and Seam Tracking capabilities by adding provided PlugIns and scripts, implementing a Python-based downloader, and enabling 6DoF compensation with adjusted downloader logic for accurate frame-based correction and sensor integration.

Your Benefit:
Accurate welding despite real-world deviations through automatic 6DoF compensation and sensor-based correction, reducing manual adjustment effort and ensuring consistent weld quality even with imperfect fixtures or varying parts



VENDOR & PRODUCTION READY ARCWELDING DOWNLOADER FOR ABB

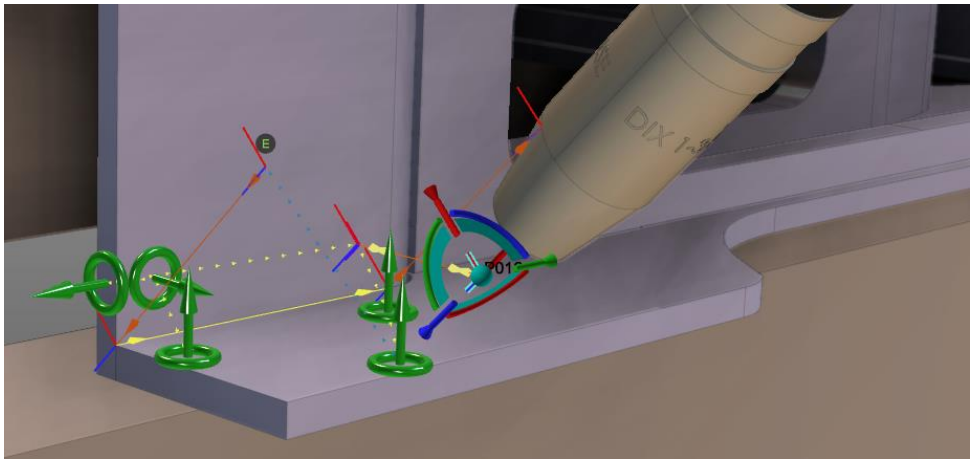
Customer Problem:
Adaptive welding with ABB IRC5 robots is complex and fragmented.
Key technologies such as touch sensing (seam finding, frame correction) and thru-the-arc tracking require manual RAPID programming, controller-side adjustments, or post-processing.

At the same time, welding data structures differ across power sources and cells, but are often hard-coded—making customization slow, error-prone, and dependent on expert knowledge.

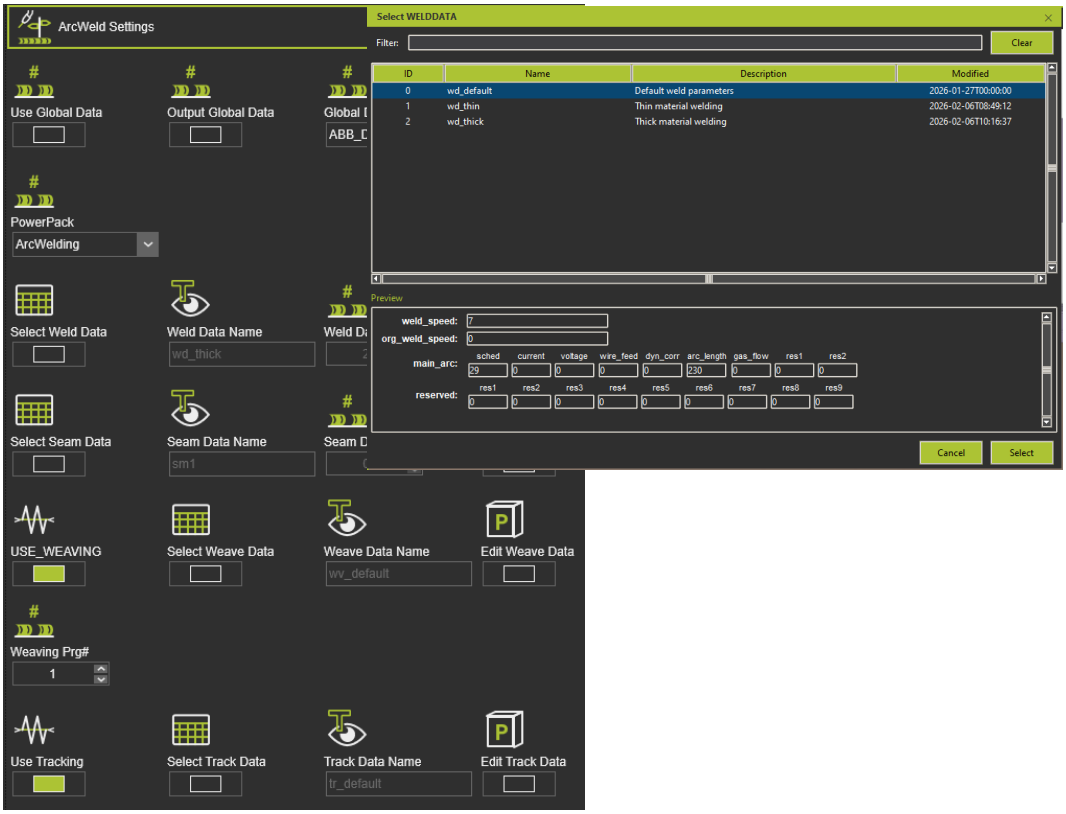
Our Solution:

FASTSUITE E2 R2026.1 introduces a unified Technology & Downloader Pack for ABB that brings these capabilities fully into OLP:

- Offline definition of ABB Touch Sensing workflows (1D–6D), including multi-point frame correction



- Integrated ArcWare thru-the-arc tracking with correct RAPID generation
- Seamless combination of sensing and tracking in one automated workflow



- Modular downloader architecture for easy customization
- Data-driven welding configuration replacing hard-coded structures

Your Benefit:

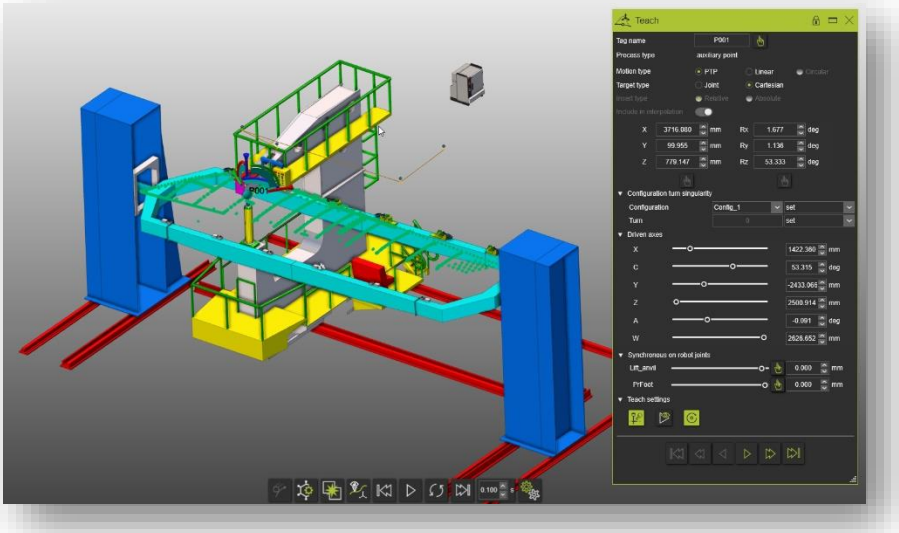
- Production-ready RAPID programs generated directly from OLP — no manual rework
- Faster and safer customization for different cells, applications, and power sources
- Robust, adaptive welding processes with higher quality and stability
- Reduced engineering effort, shorter commissioning time, and lower project risk

SUPPORT C-FRAMES MACHINER (RECOULE) KINEMATIC IN OLP

Customer Problem:
Customers face difficulties programming and simulating complex **Gemcor-style kinematic machines**, such as Recoule, GEMCOR, and P44 machine, due to limited support for their specific kinematics in OLP environments.

Our Solution:
We've introduced support for Gemcor-style machines in our OLP system, with initial implementation of Recoule kinematics

Your Benefit:
Enables reliable offline programming of complex kinematic machines, reducing manual effort and paving the way for faster deployment and future feature expansion.



NEURA LARA/MAIRA SUPPORT

Customer Problem:
Customers lack ready-to-use offline programming support for Neura Lara series robots, making setup, validation, and deployment time-consuming and error-prone.

Our Solution:
We've added the Neura Lara 15, 20, 25, 30, and 30L models to our OLP resource library, including inverse kinematics and motion capabilities.

Your Benefit:
Faster, more reliable offline programming and simulation of Neura Lara robots, reducing setup time and deployment risk.