



Closing the Loop between Engineering and Production

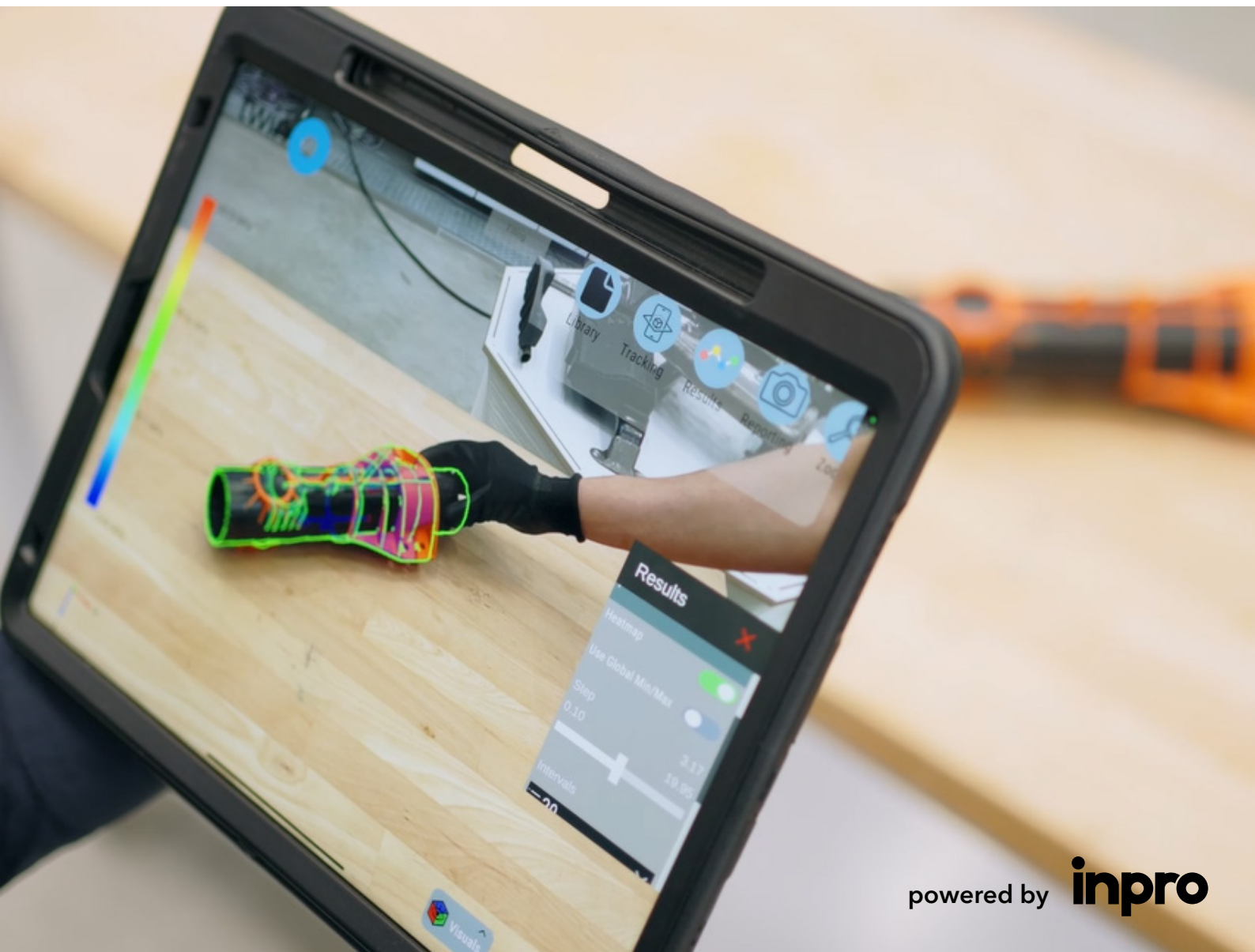


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Product Insights

1. What is twino in a nutshell?

twino is a digital workflow solution designed for engineering and shop floor teams to streamline and accelerate the injection molding ramp-up process. It enhances the execution of existing structured workflows while offering the capability to standardize previously unstructured processes.

2. What are twino's USPs?

twino is unique as a comprehensive solution combining digital planning via operating procedures with integrated setup, inspection and documentation productivity tools to streamline the injection molding ramp-up workflow. Unlike tools that address only isolated tasks, twino stands out as the only solution that seamlessly unifies these capabilities into a single, efficient system.

3. What are the benefits of twino?

Customers dealing with complex parts and/or operating at a large scale can greatly benefit from twino. For example, a typical Tier 1 mold maker produces over 100 tools annually. Each tool undergoes at least three trials, with some requiring up to five, resulting in a total of 300 to 500 trials per year.



The tool helps streamline processes and reduce time-consuming try-out iterations through:

- **Faster Setup:** Accelerated through process parameter setup, efficient gripper assembly, tool receiving/disassembly/installation checks.
- **Optimized Try-Out Iterations:** Achieve better results with fewer iterations.
- **Inspection:** Compare each step of the plan with engineering data, as-planned v/s as-built.
- **Comprehensive Documentation:** Automatically generate detailed records for improved traceability for engineering and project management.
- **Reduced Travel:** Minimize the need for engineering teams to be physically present during trials.
- **Less Troubleshooting:** Address issues more effectively with enhanced process insight.
- **Faster Data Consolidation:** Access project data quickly and efficiently for improved decision-making.

4. What are twino's features & functions?

twino includes two apps:

twino Planner (designed for engineering teams and project managers):

- **Consolidate Project Data:** Centralize all relevant project information for seamless management.
- **Create Operating Procedures (OP):** Develop detailed shop floor trial procedures by combining simulated processes, part CAD designs, and AI-driven suggestions based on past projects.
- **Generate Excel Reports:** Easily produce comprehensive reports of molding trial sessions for analysis and documentation.
- **Synchronize with Twino Execute:** Ensure real-time coordination by integrating with the shop floor team's Twino Execute mobile app.

twino Execute (designed for shop floor teams):

A suite of productivity tools that empower shop floor technicians to set up, inspect, and document processes using a structured and efficient digitized workflow. Key features include:

- **Process Parameters:** Streamline setup with precise control and monitoring of process variables.
- **CAD Compare:** Verify part designs by comparing them directly against CAD models.
- **Moldflow Overlay:** Visualize and analyze mold flow simulations on the shop floor.
- **Fill Study, Packing Study, Gate Freeze Study, Clamp Force Study:** Conduct in-depth analyses to optimize injection molding performance.
- **Paperless Plans:** Execute work instructions digitally for a seamless, eco-friendly workflow.
- **Digital Measurement:** Access precise measurement capabilities, with tape-measure-level accuracy, directly on the shop floor.
- **High-Quality Documentation:** Automatically generate detailed and professional documentation of trial sessions.
- **Real-Time Synchronization:** Synchronize twino project OP's and session results between twino planner and execute.

5. Can the system function without internet access? Does the software work offline, or is a stable network connection required?

The application works offline, an internet connection is not required.

6. Do I need a specific hardware to use the systems?

twino Planner is supported for Windows PC.

twino Execute is supported on iOS. Android, Windows and Windows on ARM support is based on demand.

You can find more information in the technical documentation.

7. How do you ensure that data from my production remains secure and isn't leaked to competitors or the public through your system? Does the system meet our IT security requirements?

twino doesn't require connection to the internet or any external servers. It can only import engineering data formats and OP's embedded in twino projects files.

8. Our machines are not configured with OPC UA. How can I bring the machine data automatically into the twino software?

IM Machines can be connected via PLCs to an MES or middle-ware such as Kepware. The middle-ware would be able to then connect to twino via OPC UA, rather than directly from the machine.

Product Usage

9. Is it true that for a significant number of customers, the commissioning steps are planned in detail beforehand by the simulation team and then simply “executed” on the shop floor using a checklist?

Yes, Tier 1 and Tier 2 manufacturers, mold makers, and OEMs—typically have well-defined, paper-based processes in place that are expected to be followed, along with the necessary documentation to be completed.

10. How intuitive is the operation? Are specialized training sessions required?

The application is largely self-explanatory and can be effectively used after a brief introductory training session.

11. How adaptable is the system to individual tools and processes?

twino 's digital operating procedures can be configured by the engineering team to suit your specific processes.

12. How do shop floor workers respond to the system? Are there resistance issues?

Feedback from the shopfloor reflects a generational divide: older workers often rely on their extensive knowledge and experience, while younger employees are more inclined toward digital tools. To bridge this gap and ensure successful adoption, a top-down approach is crucial, with project management leading the introduction and implementation of the tool.

twino plays a key role in this transition by capturing and preserving the invaluable expertise of experienced workers, making it accessible to younger generations. This not only supports the shift from an aging workforce to a younger one but also ensures that critical knowledge is retained, fostering effective digital transformation and continuity.

13. To what extent does the system replace personal experience and expertise? Can I rely on less qualified workers to operate it? Conversely, is there a risk that critical expertise may be neglected due to the system?

Organizational operating procedures or work instructions can be created or migrated into twino. Once these are established, the tool can be effectively operated by less experienced workers, as they are guided step-by-step by the predefined procedures. The results of these steps are fed back to engineering teams that can optimize based on the issues observed. This improves planning and makes execution more objective and structured. The system complements, rather than replaces critical expertise, ensuring that knowledge and experience remain integral to the process.

14. How do you convince a try-out operator that finds it inconvenient to use a tablet for viewing parts and tools and prefers using their own eyes, as well as documenting observations with paper or ChatGPT for report writing?

The injection molding ramp-up process involves numerous tasks that can quickly become overwhelming without a digital workflow tool. Relying on memory, gathering scattered information from parts, tools, machines, and steps, or using separate reporting sheets adds unnecessary complexity, especially in time-sensitive situations. Tracking details and consolidating information manually is time-consuming and prone to issues that a structured workflow could prevent. The app simplifies the process, saves time, and is easy to use—give it a try!



15. How does the tool address limitations, such as not fully replicating what a try-out operator can see with his own eyes or lacking the ability to 'feel' things like warmth or surface texture?

twino is not designed to entirely replace human abilities but to augment them as a mobile assistance system. Your observations can be easily entered into twino, which then automatically generates documentation based on them. Additionally, twino is highly extensible, allowing integration with sensor-based inputs, such as images from temperature sensors, surface finish photographs, or hardness measurements. These inputs can be annotated, and your tactile assessments, like feel or warmth, can be documented alongside. In the future, capabilities like direct temperature measurements may also be incorporated to further enhance its functionality.

Innovation Outlook

16. What are future development plans for twino?

The vision for twino is a fully digitalized and integrated ramp-up workflow between engineering and shopfloor. We are currently working on integrating support for Euromap 77, integrating AI based troubleshooting and extending our reporting capabilities.



Talk to our experts!

Akash Castelino, M. Sc.
Product Lead Digital Twin Applications
E-Mail: akash.castelino@inpro.de

**For more information
visit www.inpro.de**