

Manufacturing Logic Becomes Part of the Parametric Model

BeeGraphy Integrates Native CAM Layer into Its Parametric Manufacturing Operating System

CHEYENNE, WY, UNITED STATES, July 21, 2026 /EINPresswire.com/ -- As

manufacturers increasingly move toward configurable products and mass customization, computational design systems generate large numbers of product variations automatically. Manufacturing preparation, however, often remains a separate stage of the workflow, requiring CAM data or machining operations to be recreated whenever a product configuration changes.

[BeeGraphy](#) has integrated a native Computer-Aided Manufacturing (CAM) layer into its Parametric Manufacturing Operating System (PMOS). By embedding manufacturing logic directly

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We've spent over a year removing the separation between design and manufacturing, making production preparation faster, simpler, and much easier to automate.”

*Grigor Grigoryan, CEO of
BeeGraphy*

within the parametric model, PMOS generates production-ready outputs automatically as designs evolve, often reducing and, in many cases, eliminating the need for separate CAM preparation.

Unlike conventional CAD/CAM workflows, PMOS brings geometry, manufacturing logic, and production outputs together within a single computational system, reducing manual handoffs and ensuring design intent stays aligned with production.

At the core of PMOS is a dependency-aware computational model based on a Directed Acyclic Graph (DAG), which maintains relationships between design geometry and

manufacturing operations. When parameters change, geometry and manufacturing outputs are recalculated in the correct computational order, enabling consistent and predictable manufacturing results.

Key technical capabilities:



- Embedded Toolpaths - Machining operations are defined directly within the parametric model, so toolpaths update automatically whenever a design changes instead of being manually redrawn for every variation.
- Constraint-Aware Generation - Manufacturing outputs automatically adapt to material properties, tooling parameters, and manufacturing constraints, reducing the trial-and-error typically needed to make a new design manufacturable.
- Automated Nesting and Material Optimization - Because raw material is often the largest production cost, PMOS automatically arranges parts to minimize waste, accounting for grain direction, orientation, and material properties, and re-optimizing with every change.
- Deterministic Execution - Identical inputs consistently produce identical manufacturing results, giving manufacturers repeatable, predictable output even at high production volumes.
- Cloud-Based Collaborative Workflow - Running cloud-native, designers, engineers, and manufacturers share and update parametric data together, always from the latest synchronized version.

"Before integrating manufacturing logic into our workflow, a single custom order could take two to three days across design and CAM preparation," said Artur Arutyunyan, founder of Paraform. "Every order meant repeating the same manual tasks: nesting, separate toolpaths for large and small tools, dogbones, and tolerances. Automating these steps with BeeGraphy's parametric workflow reduces the manual effort to 1-2 minutes per order."

The integration of the native CAM layer reflects BeeGraphy's broader vision of making computational design directly deployable in manufacturing. Looking ahead, BeeGraphy is advancing PMOS as a programmable foundation for computational manufacturing.

About BeeGraphy

BeeGraphy is a cloud-based computational design platform for creating, automating, and deploying parametric workflows across architecture, product design, and digital fabrication. By integrating computational design with manufacturing technologies, the platform enables designers, engineers, and manufacturers to move seamlessly from configurable design systems to production-ready outputs within a unified workflow. Its cloud-native environment keeps parametric design systems interactive, configurable, and easy to share throughout the design process.

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