

Standardized Customization at Scale

How GESAB reinvented its product data management for global growth



GESAB is an internationally recognized specialist in the design and implementation of highly customized control centers and mission-critical environments, with more than 35 years of engineering expertise. Its customers rely on operational spaces where teams must monitor, manage and respond to real-time information without interruption.

Clients include energy companies, transportation networks, security and surveillance centers, emergency response agencies, utilities, data center operators, and large enterprises that require 24/7 operational oversight. With operations spanning Spain, Mexico, UAE and projects delivered across Europe, the Middle East, Latin America and Australia, the company has grown into a global leader in a niche but demanding market.

The Challenge: Complexity, Customization and Siloed Data

One of GESAB's many strengths is its ability to handle extreme product complexity, often managing more than 1,500 unique product variants in a single console assembly, ranging from different sizes of structural components to color variations, hardware options, accessories and customer specific parts. This creates an exceptionally high level of product variability that must be controlled with precision. But this level of bespoke design also brings significant complexity.

With 90 percent of orders requiring customization, GESAB needed a way to scale without sacrificing accuracy, speed or quality. The company's leadership recognized that, as product complexity and global demand increased, GESAB needed a more integrated and scalable approach to support its next stage of growth. At the same time, GESAB was also expanding globally. With customers expecting faster responses and higher levels of customization, the company needed a more connected, scalable way of managing product data.

"We are committed to delivering 'standardized customization'," said Santiago Tomás, Deputy Managing Director at GESAB. "The combination of global growth, product complexity and high customization meant we had to rethink our approach to product data. Managing over 1,500 product variants in every assembly meant each project required a high degree of engineering attention, even when it incorporated previously proven solutions."

GESAB was relying heavily on a standalone 3D design tool for engineering, but everything downstream was manual. Bills of materials were exported as CSV files, reworked by hand and then entered into the ERP system. Engineering BOMs and manufacturing BOMs were managed separately, often with hundreds of lines per assembly.

"Modifying a bill of materials was almost a surgical task," said Lorenzo Santana, Director of Design and Technical Office at GESAB. "Even a small change meant a huge number of revisions. The process required intensive manual verification to ensure consistency across complex bills of materials."

The impact rippled across the business. Teams worked in silos. Production and logistics relied on Excel files.

Version control required significant coordination and relied on established team knowledge and manual verification.



Partner Spotlight

9altitudes is a European digital transformation partner that specializes in implementing PLM, ERP, CRM, and MES solutions to help manufacturers streamline operations and scale efficiently. With deep expertise in PTC platforms, they combine technology, process consulting, and industry knowledge to deliver end to end digital continuity for their customers.

www.9altitudes.com

Design changes required additional coordination to ensure that production teams and supply-chain partners had immediate access to the latest approved information

"We were sending emails to update changes, but the information wasn't connected. Providers produced items with different versions,

Ensuring that every stakeholder had immediate access to the latest approved data required considerable manual coordination," Tomás added.

The Solution: A Centralized, Connected Product Data Platform

GESAB began evaluating product data management solutions and quickly realized that its ERP system alone could not support the level of complexity required. The company needed a platform that could manage engineering and manufacturing BOMs, integrate with design tools and connect seamlessly to the ERP.



We moved from working in silos to working with an end to end product vision."

Santiago Tomás, Deputy Managing Director at GESAB, S.A.

"We looked at three competitive vendors," Tomás explained. "We selected PTC Windchill because it gave us a graphical environment where it was practically impossible to miss an element or component from a bill of materials. That was the key."

The implementation was carried out with 9altitudes, who were instrumental in the success of the project.

"They listened, they empathized and they understood our processes," said Tomás. "The consultancy they did before the project helped us make the right decision. They exceeded our expectations."

GESAB initially implemented Windchill as a product management system to gain control over engineering files, versions and the flow of information coming out of its standalone 3D design tool for engineering. But as the implementation matured, it quickly evolved into a true product lifecycle backbone.

Today, Windchill connects engineering and manufacturing BOMs, integrates directly with the ERP, and centralizes product definitions across Spain, Mexico and UAE, giving every team a single source of truth throughout the entire lifecycle. By managing all product data in one centralized repository with design information flowing seamlessly into manufacturing and the ERP, Windchill enables every team member across all locations to work from the same accurate, up to date product definition.

"We moved from working in silos to working with an end to end product vision," Tomás explained. "Now everyone accesses the same data, the same versions and the same information whenever they need it."

Results: Faster, More Accurate and Ready to Scale

The impact of the transformation has been significant. Manual processes that once consumed hours have been eliminated. Errors caused by re entering data have disappeared. Engineering and manufacturing now collaborate with far greater confidence.

"For us, the biggest change is that we now manage information in a centralized way," said Tomás. "We know we're always working with the correct version and sharing the right information."

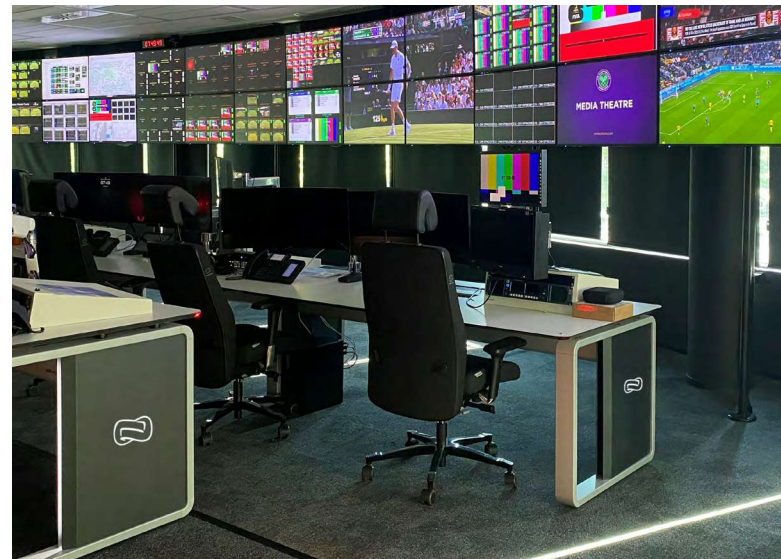
GESAB has also gained a major competitive advantage in time to market. With automated data flows and connected BOMs, the company can respond to customer requests faster and deliver materials more quickly.

"We reduced mistakes, improved communication and can now scale our operations much more effectively. Our teams no longer rely on network folders or emails. Everything is connected," said Tomás.

The transformation has also strengthened GESAB's ability to manage increasing product complexity and customization. Designers can now access historical product data, reuse proven configurations and apply the company's mantra of "standardized customization" more effectively.

Looking Ahead: A Platform for Global Expansion

GESAB sees its transformation as the foundation for its next phase of growth. With a connected product data backbone, the company is preparing to expand manufacturing into new regions while maintaining consistent product definitions across all sites.



"We now have the ability to connect other applications, like Revit, directly into the system," Tomás said.

"Because Revit defines the customer's room layout, that connection helps us respond faster and minimize any reworks."

The company also plans to leverage Windchill to create assembly instructions and documentation that will create standardized digital assembly instructions and documentation for selected product configurations, supporting certified partners and customers while maintaining GESAB's quality standards, and opening new opportunities for scalability and global reach.

"Having a centralized system allows us to work as one company, no matter the country. It gives us the confidence to grow, to compete and to innovate," concluded Tomás.

Customer Overview | GESAB

Industry	Manufacturing - Technical furniture and technology for mission critical environments
Headquarters	Madrid, Spain
Employees	100+
PTC Products	Windchill
Website	www.gesab.com

Benefits

- **One Central Source of Truth** - All product data is now stored in a single, authoritative repository, ensuring every team across Spain, Mexico and UAE works from the same accurate, up to date information.
- **Connected Engineering and Manufacturing BOMs** - Engineering and manufacturing BOMs are fully linked, eliminating manual reconciliation, reducing version drift, and ensuring changes flow cleanly across the lifecycle.
- **Seamless ERP Integration** - Design data now moves directly into the ERP without CSV exports or manual edits, removing re entry errors and accelerating downstream processes.
- **Automation of Previously Manual Tasks** - Processes that once required hours of manual effort, such as BOM updates, version checks and data transfers, are now automated, consistent and reliable.
- **Stronger Accuracy and Version Control** - Teams no longer rely on emails, network folders or personal memory to track changes. Windchill ensures everyone is always working with the correct version.
- **Faster Response and Time to Market** - With automated data flows and connected systems, GESAB can respond to customer requests and design changes far more quickly, improving delivery speed.
- **Significant Error Reduction Across Departments** - By removing manual data handling and connecting engineering to manufacturing and ERP, Windchill has dramatically reduced downstream mistakes and rework.
- **Support for High Customization at Scale** - With 90% of orders being bespoke, designers can access historical product data, reuse proven configurations, and apply GESAB's "standardized customization" approach more effectively.
- **Improved Collaboration Across the Business** - Engineering, manufacturing, logistics and pre sales now share a unified view of product data, improving communication and reducing misalignment.
- **A Scalable Platform for Global Growth** - Windchill provides the backbone for expansion into new manufacturing regions, integration with tools like Revit, and future modules such as automated assembly instructions.