

Steel Manufacturer Implements Custom MES With Ignition & Sepasoft

New System Improves ERP Integration, Data Visibility & Operator Confidence

Metaldom had a problem — their data was arriving too slowly to make decisions. Even worse, after the data was manually entered into their Manufacturing Execution System (MES), plant floor operators still didn't trust it.

As an industry-leading steel manufacturer in the Caribbean and Central America, [Metaldom](#) required craftsman-level detail, large-scale efficiency, and agile decision-making. In addition to frequent system failures, their limited MES forced operators to use paper documentation, Excel sheets, as well as independent PowerApps and Access databases. All of this resulted in frequent errors, inefficient communication, poor data visibility, and increased downtime.

Metaldom needed end-to-end traceability, from raw material all the way to finished goods. Based on their extensive history working together, Metaldom turned to Dominican Republic-based system integrator [Intelca](#) to develop and implement a custom MES solution using [Ignition](#), the enterprise industrial integration platform for SCADA, HMI, IIoT, and more.

A Collaborative Design Process

Metaldom's previous MES had sowed widespread dissatisfaction among operators and analysts who had grown skeptical of the information in the system. Intelca recognized that successfully implementing a new MES



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would require not only staff buy-in, but also staff input.

Intelca spent almost a year working with operators in each department to ensure that the system was truly bespoke — designed to systematically address each operational area.

Over the course of development, Intelca utilized staging and QA environments, allowing them to emulate each process with the individual operational team to gather feedback. Ignition's flexibility enabled Intelca to quickly adapt modules to Metaldom's evolving needs without sacrificing reliability or scalability.

From the outset, the emphasis on cross-functional teamwork and inclusive feedback loops fostered a culture of ownership and trust among stakeholders. This became a highly collaborative process, actively involving operators, analysts, and

departmental stakeholders in defining requirements, UI/UX designs, testing, and quality assurance to ensure the MES closely matched the real-world operational needs.

A Custom MES, Integrated With SAP

One of Metaldom's main requirements was to improve data management by connecting the new Ignition-based MES to SAP, which they used as an ERP. Intelca took advantage of Metaldom's standardized ERP implementation, meaning that Ignition could integrate with SAP via standard Business Application Programming Interfaces (BAPIs) without increasing overall complexity.

Utilizing Sepasoft's [Business Connector](#) and [Interface for SAP ERP](#) modules for Ignition, Metaldom can create work orders directly in SAP based on predetermined production plans while maintaining the flexibility to make changes as needed. The Ignition-based MES allows a smooth flow of information from the plant floor to business systems. Metaldom can track their production flow, data collection, and integration with SAP at a glance across dynamic, user-friendly dashboards that display relevant KPIs.

Intelca also developed auxiliary systems within Ignition to replace Metaldom's legacy PowerApps implementations. One of these auxiliary systems was a comprehensive, centralized label-printing system directly integrated into the MES, significantly streamlining the product finishing and labeling processes across multiple production lines. Another was an energy monitoring system that logged the energy consumed to produce the final product

based on the last hour's shift and the types of fuels used.

Newfound Agility

Metaldom has always been data-driven. Now, with the Ignition-powered MES, Metaldom can obtain more detailed information at greater speeds, giving them a newfound agility. Ignition has vastly improved data visibility with real-time production monitoring, enabling quicker decision-making, better process control, and less operational disruptions.

By actively involving operators and analysts in the development process, Metaldom's staff had no trouble transitioning to the Ignition system. This approach also enhanced cross-departmental communication, improving overall operational efficiency and removing ambiguity from the production process.

Ignition's flexibility, adaptability, and interoperability empowered Intelca to unify people, processes, and data so they could continuously improve. This project showcased the immense value of tailored software development in complex industrial environments. Given the successful progress of this implementation, Metaldom now plans to extend this MES solution across additional plants, prompting an architectural evolution for scalable enterprise-wide integration.

Project Scope

- Start Date: June 2024
- Deploy Date: May 2025
- Tags: 2,800
- Screens: 497 (including pop-ups)

- Clients: 22
 - Alarms: 2 (production halted)
 - Devices: 6 label printers, 12 PLCs through OPC UA server
 - Architectures: Standard
 - Databases: 6 MySQL, 1 Databricks Data Lake
 - Historical Data Logged: 118 tags
 - Number of People on Team: 6
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Founded in 1997 as a specialist in industrial projects, Intelca has transformed into a diversified company with a strong focus on Industry 4.0 initiatives. Today, its Special Projects Division spearheads Digital Transformation efforts across multiple sectors using Ignition, allowing businesses to harness the full potential of automation and data integration. Intelca prides itself on being at the forefront of technological advancements, with a proven track record of success and a team of highly credentialed professionals certified in the latest technologies.

Learn more: <https://intelca.net/>

Founded in 1967, Metaldom is a leading manufacturer and supplier of long steel products in the Caribbean and Central America. The company plays a critical role in regional development by providing high-quality steel solutions for construction, industry, and infrastructure. With a focus on innovation, sustainability, and operational excellence, Metaldom's portfolio includes rebar, wire rod, merchant bars, and specialized steel products.

Learn more: <https://metaldom.com/>