



From Setback to Success: How Switching from an ERP's MES to Solumina Won DoD Contracts

► Customer Profile

iBase-t Customer: Large Aerospace & Defense Original Equipment Manufacturer (OEM)

Industry: Aerospace and Defense Manufacturing

Manufacturer's Primary Customer: Department of Defense (DoD)

Challenge: Delivering high-quality, compliant products under strict government timelines using an ERP's MES.



The Situation

A large aerospace & defense OEM specializing in producing precision parts and assemblies for government contracts had their sights set on a new multimillion-dollar contract with the Department of Defense (DoD). However, the requirements for the bid were stringent, including real-time production tracking, ironclad quality assurance, and complete traceability for every part and component.

When it came time to get serious about what they needed from their manufacturing execution system (MES), the customer had the choice of sourcing a new vendor or relying on the MES included in their enterprise resource planning (ERP) system's enterprise license. The ERP vendor promised that their MES would ultimately meet the customer's requirements and, perceiving the MES solution to be 'free' and a convenient choice, the customer's IT team chose to stay with the ERP MES. While the MES was currently missing some key features, the ERP vendor assured the customer that the features were coming, albeit on a multi-year product roadmap, and that the system would meet their industry-specific requirements.

The customer thought they had lowered their total cost of ownership. Instead, they would find themselves waiting years, blowing their budget, and losing their government contract to their competition.

The Challenges

Months turned into years, and the promised features from the ERP provider never materialized. The customer struggled with significant gaps in their manufacturing processes:

- **Customization:** Customizing processes and developing workarounds often led to rigid, hard-coded workflows that were difficult to scale—especially as the business needs evolved. The customizations created increased reliance on IT and introduced risk and technical debt every time a system change was needed.
- **Compliance Risks:** The system lacked robust compliance features, making it difficult to prove adherence to the required Cybersecurity Maturity Model Certification and other skillset certifications.
- **Shop Floor Inefficiencies:** Real-time production visibility was unreliable, slowing decision-making and production timelines. Time lag in visibility to quality issues made it challenging to meet customer timelines.
- **Upgradability:** The ERP MES wasn't built for the aerospace and defense industry, so the customer had to invest in heavy customization. As the vendor released new versions of the MES with upgraded features, the customizations held the customer back from taking advantage of them. Regression testing became a bottleneck and exacerbated the problem.
- **Loss of Institutional Knowledge:** Over the years, as the MES was being implemented, the customer lost valuable knowledge as their employees resigned or retired. Given the lack of data inherently captured in the ERP's MES, the customer struggled with training employees and relied heavily on manually transferring data.
- **Reconciling Disparate Systems:** The ERP's MES couldn't effectively integrate with other essential systems such as quality management software, calibration databases, or legacy production tools. As a result, employees had to reconcile data manually across systems—introducing risk, wasting time, and making it difficult to generate a single source of truth for audits or production reviews.
- **Traceability Issues:** The ERP's MES couldn't provide granular tracking, leaving the company in an expensive position trying to meet DoD's reporting standards. Manual workarounds for reporting were created, and while they eventually had an effect, the cost was too high.

- **Managing Tool Calibration:** The system couldn't track tool calibration schedules and status in real-time. Operators frequently used tools without confirmation of calibration compliance, increasing the risk of nonconformance. The company also had difficulty producing calibration records during audits, further damaging their credibility.
- **Managing Supplier Quality:** The ERP MES lacked robust supplier quality management features. The customer couldn't effectively track supplier performance, incoming inspection issues, or link supplier quality problems to internal production challenges. This disconnection led to delays, rework, and difficulty holding suppliers accountable in a highly regulated environment.

Despite the customer's best efforts to develop manual workarounds, the system's limitations were glaring. After waiting years for functionality that never came, the customer lost money, valuable time, and resources.

The Fallout

When our customer submitted their bid for the DoD contract, they were disqualified after failing to prove they could meet the required quality, compliance, and traceability standards within the project timeline. Losing the DoD contract was a wake-up call for our customer. Beyond the immediate financial blow, the loss highlighted a deeper issue: the cost of waiting for a system that was never designed to meet the unique needs of aerospace and defense manufacturing.

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"We trusted that the ERP vendor would deliver on their promises, but waiting cost us far more than time—it cost us a key customer and our reputation. The MES didn't meet our needs, and the manual workarounds we relied on just weren't enough. It became clear that we needed an MES provider with deep roots and a solution purpose-built for this industry to stay competitive and compliant."

—
Operations Manager

The Lessons Learned

For our customer, the experience underscored critical lessons about MES selection:

1. **Generic Solutions Aren't Enough:** ERP-driven MES solutions, designed for broad manufacturing needs, often fail to address the specialized demands of aerospace and defense. Our customer's IT team didn't consider the complex effectivity of the ERP's MES. In addition, it could not manage parts and assemblies for multiple government entities and countries.
2. **Fit-for-Purpose is Essential:** Configuration isn't enough to overcome the role-based functionality necessary. The customer needed to lean heavily on their own team to Customize the ERP MES. Solumina, a fit-for-purpose MES built in collaboration with the leading aerospace and defense manufacturers over the last three decades, has out-of-the-box functionality for the control, visibility, and traceability needed.
3. **Delays Have Consequences:** Waiting for the ERP provider's roadmap delayed our customer's ability to modernize their operations, ultimately costing them millions in lost revenue, reputation, and company morale.
4. **Being Short-sighted Clouds Judgment:** Even though the ERP MES was a 'freebie', the hidden prices were staggering. Our customer's total cost of ownership grew 5x when they reviewed their customizations, integrations with other platforms, training, and the ability to upgrade the solution.
5. **Flexibility Fuels Agility:** Closed, rigid systems limit innovation and slow progress. Our customer discovered that introducing new technologies or integrating with essential systems was nearly impossible with their ERP's MES. In contrast, Solumina's open architecture—with pre-built extensions and open APIs—gave their teams the flexibility to adapt, expand, and evolve as business needs changed. This level of interoperability empowered them to modernize without disruption and future-proof their operations against further constraints.

Moving Forward

After losing the contract, our customer re-evaluated their approach. They researched multiple vendors and chose iBase-t for its industry expertise and customer success. They implemented Solumina, a fit-for-purpose MES designed for aerospace and defense manufacturing. Solumina integrated seamlessly with their existing ERP through open APIs and delivered immediate results:

- **Winning New Contracts:** Our customer is now able to meet the rigorous demands of the DoD.
- **Enhanced Traceability:** Granular tracking for every part and process.
- **Real-Time Compliance Monitoring:** Automated compliance checks at every step. And Solumina supports customers in achieving CMMC compliance by providing key security capabilities such as encryption (in transit and at rest), access controls, audit logging, and secure configurations.
- **Improved Efficiency:** Streamlined workflows that eliminated manual workarounds.
- **Ensured Quality:** Solumina's embedded Enterprise Quality Management System (EQMS) makes it possible to ensure products are manufactured to the highest quality standards on a consistent basis.

Through their collaboration with iBase-t, this leading aerospace and defense OEM transformed their operations and reclaimed their competitive edge. By partnering with iBase-t, the customer gained not only a modern, compliant, and scalable MES, but also a trusted advisor committed to their long-term success. With iBase-t's industry expertise, responsive support, and a product roadmap aligned with A&D priorities, the customer is now winning contracts, confidently meeting DoD requirements, and operating with agility, visibility, and control. Their story is a clear reminder: when quality, compliance, and agility are non-negotiable, settling for less in your MES can cost you business and contracts—but the right choice can change your future.

About iBase-t

Headquartered in Lake Forest, California, iBase-t is a software company that simplifies how complex products are built and maintained. Founded in Southern California in 1986, iBase-t delivers solutions that ensure digital continuity across manufacturing, quality, and maintenance, repair, and overhaul (MRO) operations on a global scale. iBase-t's Solumina Manufacturing Operations Platform is a cloud-native solution that establishes a digital ecosystem to drive innovation and improve operational performance. With offices in the U.S., UK, France, and India, iBase-t customers include Lockheed Martin, Northrop Grumman, Rolls Royce, Pratt & Whitney, and Textron.

The Solumina Manufacturing Operations Platform by iBase-t consists of an integrated suite of MES, SQM, and MRO solutions. Designed for complex, highly regulated discrete manufacturers who seek to digitally transform their operations, Solumina connects manufacturing operations, quality, and sustainment management in a seamless flow of data across the value chain and product lifecycle.

The Solumina Manufacturing Operations Platform creates the technology infrastructure manufacturers need to harness advances in model-based functionality like PMI continuity, Assisted Engineering Changes and augmented reality guidance for the workforce, IIoT connectivity for equipment, new levels of intelligence for decision making, and higher levels of customer and supply chain collaboration.

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