

F R O S T & S U L L I V A N

# 2024 ENABLING TECHNOLOGY LEADER

*IN THE GLOBAL MES IN  
MEDTECH AND LIFE  
SCIENCES INDUSTRY*



F R O S T & S U L L I V A N

BEST  
2024 PRACTICES  
AWARD

## Best Practices Criteria for World-Class Performance

Frost & Sullivan applies a rigorous analytical process to evaluate multiple nominees for each Award category before determining the final Award recipient. The process involves a detailed evaluation of best practices criteria across two dimensions for each nominated company. iTAC Software excels in many of the criteria in the MES in MedTech and life sciences space.

AWARD CRITERIA	
<i>Technology Leverage</i>	<i>Customer Impact</i>
Commitment to Innovation	Price/Performance Value
Commitment to Creativity	Customer Purchase Experience
Stage Gate Efficiency	Customer Ownership Experience
Commercialization Success	Customer Service Experience
Application Diversity	Brand Equity

### *Manufacturing Execution Systems in Medical Technology and Life Sciences*

The global manufacturing execution systems (MES) market is experiencing a profound transformation, driven by the increasing complexity of manufacturing processes, stringent regulatory requirements, and a heightened demand for product traceability. These factors are particularly critical in the medical technology (MedTech) and life sciences sectors, where precision, safety, and efficiency are all quite vital.

In 2023, the MES market was valued at \$13.66 billion, with projections indicating robust growth to \$25.43 billion by 2030, reflecting a compound annual growth rate of 9.3%.<sup>1</sup> This expansion is fueled by factors such as labor shortages, supply chain optimization needs, and technological advancements that enhance MES capabilities.<sup>2</sup> In the MedTech and life sciences industries, MES solutions are indispensable due to their ability to provide the traceability and compliance necessary for operating in highly regulated environments.<sup>3</sup> The integration of MES with broader manufacturing operations management (MOM) solutions enables companies to streamline everything from production scheduling to quality control within a unified system.<sup>4</sup> This trend is especially significant in the life sciences sector, where comprehensive and accurate data is essential for meeting stringent regulations across medical devices, pharmaceuticals, and related sectors.

<sup>1</sup> Frost Radar™: Manufacturing Execution Systems, 2024 (Frost & Sullivan, April 2024)

<sup>2</sup> Ibid.

<sup>3</sup> Global Manufacturing Execution Systems Growth Opportunities (Frost & Sullivan, February 2024)

<sup>4</sup> Frost Radar™: Manufacturing Execution Systems, 2024 (Frost & Sullivan, April 2024)

As supply chains in MedTech and life sciences become more and more complex, the need for MES solutions that offer a holistic view of manufacturing operations increases. Advanced MES platforms are crucial for managing intricate networks of suppliers, manufacturers, and distributors involved in producing medical devices and pharmaceuticals. Frost & Sullivan appreciates how these platforms drive innovation, ensure compliance, and achieve operational excellence across the board.

### ***iTAC Software: An Innovative, Agile, and Reliable Technology Leader***

*“iTAC Software provides flexible deployment options for its solutions, including on-premises, cloud-based, and hybrid models, designed to meet diverse customer requirements. The hybrid model employs advanced edge technology to process and analyze data locally, transmitting only critical information to the cloud. This approach maximizes cost efficiency and accelerates data handling, addressing concerns associated with transitioning to a fully cloud-based solution.”*

***- Ain Sarah Aishah  
Best Practices Research Analyst***

Founded in 1998 and headquartered in Montabaur, Germany, iTAC Software stands out as a global leader in MES within the MedTech and life sciences sectors through its revolutionary approach to addressing industry demands. By leveraging data analytics, real-time monitoring, and seamless integration capabilities, the company provides unparalleled visibility and control over manufacturing processes, enhancing production efficiency and ensuring compliance with stringent industry standards. The company’s focus on customer satisfaction in its innovation builds trust and reliability, resulting in successful outcomes and long-term loyalty.

iTAC Software’s affiliation with Dürr Group, a global leader with over 25,000 employees and a strong emphasis on digitalization, further strengthens its market position.<sup>5</sup>

The company leverages the group’s collective expertise in MES, MOM, planning, scheduling, and simulation, enabling it to deliver specialized solutions that resonate with customers during the sales and implementation phases.

In 2023, Frost & Sullivan recognized iTAC Software’s commitment to customer-centric strategies and best practices. The company’s reliability and trusted reputation solidify its continuing innovation and sustained leadership in enabling technology for MES within the MedTech and life sciences sectors.

### ***Redefining MES with iTAC Software’s Advanced Solutions***

The continuous evolution of iTAC Software’s iTAC.MOM.Suite reflects its advanced approach. This MOM solution integrates MES functions with real-time analytics and process optimization, offering an open, service-oriented architecture and microservices approach that ensures seamless integration with existing systems. This design allows simple expansion through low-code applications, enhancing both user-friendliness and customization. It reduces the time required to create business processes by up to 65% - and generates user interfaces by up to 80%.<sup>6</sup> By continually refining and expanding its capabilities, the

<sup>5</sup> Frost & Sullivan’s Interview with iTAC Software (August 2024)

<sup>6</sup> <https://www.itacsoftware.com/en/media/news/news-detail/view/practically-no-need-for-programming-mes-from-itac-now-with-low-code-tools-83411#:~:text=With%20the%20low%20code%20tools,by%20up%20to%2080%20percent>

company establishes itself as a leader in technological innovation, pushing the boundaries of MES solutions.

Expanding on this innovative foundation, iTAC Software introduced iTAC.MA.Suite, a comprehensive manufacturing analytics control product line. This suite integrates technologies such as the Industrial Internet of Things (IIoT), edge computing, and artificial intelligence (AI)-driven analytics, offering a platform for real-time and historical analyses at machine, line, and factory levels.<sup>7</sup> These capabilities empower businesses to monitor, control, and enhance their production processes with unparalleled precision, which is quite critical for identifying quality issues, increasing overall efficiency, and making informed, data-driven decisions.

The iTAC.MA.Suite comprises several key components:

- **iTAC.IIoT.Edge:** Delivers real-time analytics with advanced monitoring and predictive capabilities. By using AI and machine learning (ML), it enhances production quality, predicts machine conditions, and prevents errors in the manufacturing process, facilitating rapid and informed decision-making.
- **iTAC.SMT.Edge:** Functions as a versatile machine integration platform in the Surface Mount Technology (SMT) production environment. It enables bidirectional connectivity between machines and facilitates real-time data analysis and communication to optimize production processes, improve quality, and maintain data sovereignty with edge technology.
- **iTAC.Asset.Analyzer:** Centralizes real-time monitoring and analytics for manufacturing equipment, providing comprehensive insights into performance, quality, and utilization. This enhances transparency and enables quick, data-driven decision-making across all processes. The intuitive nature of the Asset Analyzer allows operators, engineers, and management to perform in-depth analysis without requiring specialized technical knowledge, making it accessible to a broad range of users.

The suite's modular design also allows for independent deployment or integration with the iTAC.MOM.Suite.<sup>8</sup> This approach mitigates vendor lock-in challenges, ensuring seamless adoption of iTAC Software's solutions across various manufacturing environments. By continuously integrating emerging technologies and refining its offerings, the company ensures clients are equipped with the latest tools to maintain a competitive edge and enhance product performance.

Further enhancing its offerings, iTAC Software provides flexible deployment options for its solutions, including on-premises, cloud-based, and hybrid models, designed to meet diverse customer requirements. The hybrid model employs advanced edge technology to process and analyze data locally, transmitting only critical information to the cloud.<sup>9</sup> This approach maximizes cost efficiency and accelerates data handling, addressing concerns associated with transitioning to a fully cloud-based solution.

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<sup>7</sup> <https://www.itacsoftware.com/en/media/news/news-detail/view/itac-shows-analyzing-the-performance-of-the-entire-manufacturing-environment-with-just-one-tool>

<sup>8</sup> <https://www.itacsoftware.com/en/products-solutions/itacmasuite>

<sup>9</sup> Frost & Sullivan's Interview with iTAC Software (August 2024)

## ***Driving MES Excellence with Cutting-edge Technologies and Standards***

iTAC Software's approach to innovation extends beyond the traditional MES framework by integrating cutting-edge technologies like AI, ML and large language models in its product lines. At the core of this advancement is an AI mechanism that analyzes data and predicts outcomes based on gathered information. This capability proves particularly crucial in brownfield integrations, where new technologies must seamlessly incorporate into existing systems. The company's advanced solution facilitates smooth integration, allowing for real-time data analysis and predictive quality measures.

*"The iTAC.MA.Suite stands out as a versatile solution that balances standardization with customization. It effectively addresses 80% to 90% of industry use cases while offering tailored modifications for specific operational needs, ensuring flexibility and reliability across various applications in the industry."*

**- Ain Sarah Aishah**  
**Best Practices Research Analyst**

The integration of AI and ML technologies by iTAC Software significantly enhances operational efficiency and decision-making within the MedTech and life sciences sectors. The iTAC.MA.Suite stands out as a versatile solution that balances standardization with customization. It effectively addresses 80% to 90% of industry use cases while offering tailored modifications for specific operational needs, ensuring flexibility and reliability across various applications in the industry.<sup>10</sup>

Further advancing its innovative approach, iTAC Software introduced the "Ask Our Doc" bot mechanism, based on large language models such as ChatGPT-4.<sup>11</sup> This tool

enhances user interaction by providing quick access to necessary information, streamlining the production process. By integrating extensive documentation into this AI-powered system, the company enhances production efficiency and provides real-time insights and solutions. This integration optimizes functionality and service inquiries, showcasing the company's commitment to innovation and user empowerment.

Additionally, the company revolutionizes the integration between MOM and Enterprise Resource Planning systems, enabling a fully bidirectional, real-time data exchange that enhances operational efficiency and transparency. This seamless connectivity allows businesses to update and synchronize all critical production data continuously, including master data and work plans. With real-time visibility, users can track production orders, quantities produced, scrap rates, and rebooking situations in detail.<sup>12</sup> This advanced connectivity unifies data flow across systems, empowering businesses to make informed decisions that drive superior operational outcomes.

To strengthen its commitment to revolution, iTAC Software places a strong emphasis on regulatory compliance. The company prioritizes compliance with stringent MedTech validation and requirements. Its MES/MOM solutions adhere to essential standards such as the International Organization for Standardization 13485, Food and Drug Administration current Good Manufacturing Practices and Title 21

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<sup>10</sup> Frost & Sullivan's Interview with iTAC Software (August 2024)

<sup>11</sup> Ibid.

<sup>12</sup> Ibid.

of the Code of Federal Regulations Part 11.<sup>13</sup> This adherence facilitates streamlined product development, accelerated market entry, and robust quality management, reinforcing the company's dedication to innovation and regulatory excellence.

iTAC Software's innovative integration of advanced technologies, coupled with its commitment to operational efficiency, connectivity, and regulatory compliance, position the company as a leader in the MedTech and life sciences sectors, driving forward the capabilities of MES.

### ***Strengthening Customer Relationships through Strategic Alignment and Feedback***

At the heart of iTAC Software's customer experience strategy is a multi-layered framework that emphasizes close collaboration at all levels. On the executive front, the company engages with customer leadership through regular roundtable steering committees and annual top management meetings. These sessions align iTAC Software's offerings with the broader strategic objectives and industrial focuses of its customers, ensuring its products continually meet and exceed needs.<sup>14</sup>

To further enhance engagement, the company fosters collaboration through user groups composed of experts from its customer base. These annual meetings focus on discussing product developments, sharing insights, and providing feedback. iTAC Software presents its latest functionalities and roadmaps, seeking input to refine its offerings. This collaborative process extends into working groups, where select customers work closely with the company to define new functionalities based on market research and specific needs.<sup>15</sup> By integrating customer feedback into its development process, iTAC Software ensures that its products remain relevant and tailored to user requirements.

During the implementation of its solutions, iTAC Software employs a structured approach to guarantee compliance with stringent regulations and alignment with customer needs. Utilizing the V-model for quality assurance, the company divides the process into defined phases with accompanying test stages, ensuring individual components and the overall system meet regulatory and customer requirements.<sup>16</sup> By focusing on rigorous testing and compliance, iTAC Software ensures advanced, reliable and secure solutions. Its Active Traceability function enhances this process by enabling real-time quality management. This function allows for seamless traceability, early detection of quality issues during production, systematic analysis of root causes, and prompt corrective actions.<sup>17</sup> This approach supports continuous improvement, simplifies processes such as product recalls, and enhances operational efficiency and regulatory compliance.

In addition to fostering these customer connections, the company maintains a focus on delivering a low total cost-of-ownership. Its technology minimizes acquisition, implementation, and maintenance costs, making it cost-effective.<sup>18</sup> By aligning its pricing with industry needs and customer expectations, Frost &

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<sup>13</sup> <https://www.itacsoftware.com/en/industry-solutions/medical-engineering>

<sup>14</sup> Frost & Sullivan's Interview with iTAC Software (August 2024)

<sup>15</sup> Ibid.

<sup>16</sup> iTAC Software's MES for MedTech Whitepaper (2022)

<sup>17</sup> Ibid.

<sup>18</sup> iTAC Software's iTAC at Glance Deck (July 2024)

Sullivan points out that iTAC Software remains quite competitive while ensuring superior value. This commitment to cost efficiency nicely complements its emphasis on customer satisfaction.

The company's approach to customer experience goes beyond technology delivery. By integrating customers into every stage of product development, iTAC Software ensures impactful solutions, aligned with long-term client goals. This strategy builds lasting relationships and customer loyalty, driving shared success that positions the company as a trusted partner in the industry.

## Conclusion

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Technology integration is a critical success factor for the manufacturing execution systems (MES) sector within the medical technology (MedTech) and life sciences industry. Yet with many options available, market stakeholders need to leverage the most appropriate and best technology-based solutions to optimize their market impact.

iTAC Software solidifies its leadership in the market through its relentless commitment to innovation and excellence. By integrating cutting-edge technologies, such as real-time analytics, artificial intelligence, and machine learning, the company enhances operational efficiency and ensures rigorous compliance with industry regulations. Its strategic alignment with customer needs and proactive engagement in feedback loops reinforce its reputation as a reliable and agile partner. Through continuous advancements and tailored solutions, iTAC Software stands at the forefront of MES, driving transformative improvements and setting the benchmark of manufacturing excellence in the global market.

With its strong overall performance, iTAC Software earns the 2024 Frost & Sullivan Global Enabling Technology Leadership Award.

## What You Need to Know about the Enabling Technology Leadership Recognition

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Frost & Sullivan's Enabling Technology Leadership Award recognizes the company that applies its technology in new ways to improve existing products and services and elevate the customer experience.

### Best Practices Award Analysis

For the Enabling Technology Leadership Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

#### *Technology Leverage*

**Commitment to Innovation:** Continuous emerging technology adoption and creation enables new product development and enhances product performance

**Commitment to Creativity:** Company leverages technology advancements to push the limits of form and function in the pursuit of white space innovation

**Stage Gate Efficiency:** Technology adoption enhances the stage gate process for launching new products and solutions

**Commercialization Success:** Company displays a proven track record of taking new technologies to market with a high success rate

**Application Diversity:** Company develops and/or integrates technology that serves multiple applications and multiple environments

#### *Customer Impact*

**Price/Performance Value:** Products or services provide the best value for the price compared to similar market offerings

**Customer Purchase Experience:** Quality of the purchase experience assures customers that they are buying the optimal solution for addressing their unique needs and constraints

**Customer Ownership Experience:** Customers proudly own the company's product or service and have a positive experience throughout the life of the product or service

**Customer Service Experience:** Customer service is accessible, fast, stress-free, and high quality

**Brand Equity:** Customers perceive the brand positively and exhibit high brand loyalty



