Scaling the software-defined factory with Red Hat and iTAC

Overcoming global scale and innovation barriers

Global manufacturers are currently hindered by a scalability gap, often referred to as pilot purgatory. While digital innovations may succeed on a single production line, they frequently fail to translate into enterprise-wide value because the underlying infrastructure is a patchwork of inconsistent, traditional systems. This fragmentation turns every new rollout into a manual engineering project, creating high-maintenance overhead that stretches IT teams thin and leads to costly, unplanned downtime.

This challenge is intensified by a persistent divide between IT and operational technology (OT). While IT departments require centralized security and cloud-native standards, operations teams require local, real-time control to maintain production, even during network disruptions. Without a unified computing foundation, critical data remains stuck at the machine level, preventing leadership from gaining a real-time view of global performance. Furthermore, many organizations suffer from infrastructure lock-in, tethered to monolithic systems that lack the portability needed to connect the shop floor and the cloud.

To compete in a software-defined era, manufacturers must move beyond these fragmented environments. By establishing a portable, automated foundation, organizations can mitigate the risk of production stops while gaining the agility to integrate future innovations. This unified approach not only helps solve today's operational challenges but also helps infrastructure support the scalability and AI capabilities necessary for innovation.

A unified strategic approach to industrial transformation

Red Hat and iTAC Software AG have partnered to deliver a future-ready modular platform that works consistently from the factory floor to the cloud. By combining iTAC.MOM.Suite with the enterprise industrial edge platform from Red Hat, this partnership provides a flexible production management system that supports streamlined deployment and scalability and is quickly adaptable to the specific operational needs and regulatory requirements of manufacturers.

This framework delivers an open, enterprise-optimized reference platform that aligns with the existing hybrid cloud strategies of global customers.

The value of the unified platform

- **Hybrid flexibility, portability, and data sovereignty:** Dynamically deploy manufacturing workloads based on cost, performance, and strict local compliance without the expense of rearchitecting software. Powered by Red Hat® OpenShift®, this foundation adheres to strict data isolation policies, allowing organizations to keep sensitive, core operational data entirely localized on the factory floor while selectively routing partial data (such as high-level analytics) to the public cloud.

- **Traditional virtualization and container coexistence:** Modernize infrastructure without forcing an immediate, risky rewrite of traditional systems. The platform allows organizations to run older, critical Microsoft Windows-based virtual machines (VMs) side-by-side with modern, cloud-native containerized applications on the exact same Red Hat OpenShift infrastructure layer, which unifies fragmented IT architectures.
- **Accelerated time-to-value via automated operations:** Shrink traditional 40-day manual staging and testing backlogs down to a clean, predictable 1-to-2-day rollout. By using Red Hat OpenShift to automate routine maintenance, patching, and scaling of iTAC.MOM.Suite, the platform eliminates error-prone manual deployment procedures and reduces unplanned factory downtime.
- **Standardized enterprise security focus:** Establish hardened protection for key manufacturing data and automated regulatory compliance uniformly across every global plant. Rather than patching security gaps after deployment, the platform uses the integrated DevSecOps capabilities offered by Red Hat OpenShift to add security protocols directly into the core iTAC.MOM.Suite deployment layer.
- **Cost-efficient edge resiliency:** Maintain production continuity and local data autonomy even during total cloud network blackouts. The platform achieves this by using the compact, 3-node infrastructure configurations offered by Red Hat to deliver robust localized failover directly inside resource-constrained factory environments—at a fraction of traditional infrastructure capital expenditure (CapEx).
- **Global scalability and strategic visibility:** Replicate proven, security-focused software configurations across a global footprint with a single click. Combining iTAC's modular microservices with the centralized orchestration provided by Red Hat gives organizations the ability to manage the entire global software lifecycle through a single pane of glass.

Ecosystem harmonization: scaling across specialized partner solutions

A fundamental differentiator of this joint solution is the complete architectural alignment of the broader iTAC software ecosystem. iTAC has fully standardized its specialized software subsidiaries—including Cogiscan (universal machine interfacing), DUALIS (advanced planning and scheduling), and Accevo (specialized process manufacturing)—onto the exact same Red Hat OpenShift reference platform.

Internal IT and OT teams are not forced to waste time stitching together disparate applications from multiple vendors because the entire manufacturing stack inherits a single, unified architectural blueprint. This harmonized ecosystem delivers 5 key business advantages for global operations:

- **Increased product quality.** Standardized, out-of-the-box machine interfacing from Cogiscan catches data anomalies and defects the moment they occur, reducing material waste and production losses while maintaining continuous regulatory compliance.
- **Higher operational efficiency.** Transitioning from manual environment staging to automated Red Hat OpenShift blueprints mitigates configuration errors across all factory software applications, so engineering teams can focus on production throughput rather than troubleshooting infrastructure.
- **Cost reduction.** Standardizing on compact, containerized architectures across all application partners lowers total cost of ownership (TCO). This reduces localized hardware footprints and eliminates the massive engineering overhead required to maintain fragmented, nonstandardized open source environments.

- **Greater production flexibility.** A highly modular software architecture shared by iTAC for discrete industry, DUALIS GANTTPLAN for Advanced Planing and Scheduling, and Accevo for process industries allows lines to pivot or software updates to be applied with no cross-platform disruption, helping factories respond to shifting market demands rapidly.
- **Improved enterprise collaboration.** Harmonizing planning, machine interfacing, and execution layers breaks down traditionally isolated operational processes—providing a single version of the truth that aligns day-to-day shop floor reality with global corporate strategy.

Consistent, scalable architecture for the future of manufacturing

The convergence of iTAC, its ecosystem partners, and Red Hat technologies helps maximize business value, specifically targeting operational efficiency and capital flexibility. By establishing a highly standardized baseline infrastructure and deploying automated container lifecycles across the entire industrial ecosystem, organizations eliminate the vendor lock-in typically associated with proprietary systems.

Furthermore, looking toward the future of data-heavy manufacturing, this platform's open architecture acts as a foundational springboard for advanced automation. It supports organizations looking to scale from basic monitoring into real-time AI inference and predictive maintenance directly at the edge.

Ultimately, this partnership provides a reliable, high-performance roadmap for global digital transformation, turning localized manufacturing data into an engine for enterprise-wide growth.

Ready to modernize your operations?

Take the next step towards your flexible, modernized manufacturing foundation. Learn more about the Red Hat approach to software-defined manufacturing or connect with your Red Hat or iTAC account executive to discuss your specific digital transformation roadmap.

About Red Hat

Red Hat is the world's leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high-performing cloud, developer, AI, Linux, automation and application platform technologies. Red Hat helps customers develop cloud-native applications, integrate existing and new IT applications, and automate and manage complex environments. A trusted adviser to the Fortune 500, Red Hat provides award-winning support, training, and consulting services that bring the benefits of open innovation to any industry. Red Hat is a connective hub in a global network of enterprises, partners, and communities, helping organizations grow, transform, and prepare for the digital future.

About iTAC

iTAC Software AG, an independent company of Dürr, a mechanical and plant engineering company, is a leading MES/MOM provider. With the iTAC.MOM.Suite, the company offers a comprehensive manufacturing management system that is used worldwide by companies in discrete manufacturing. The industries addressed include automotive, e-mobility, electronics/EMS, telecommunications, medical technology, metal industry, and injection molding. Other systems and solutions for implementing IIoT and Industry 4.0 requirements complete the portfolio.

Among other things, the company offers the iTAC.MA.Suite for in-depth analysis at machine, line, and factory levels, as well as AI-powered solutions.

iTAC Software AG is headquartered in Montabaur, Germany, and has subsidiaries in the USA, Mexico, China, and Japan, as well as a global partner network for sales and service. The iTAC group of companies include DUALIS, Cogiscan, and Accevo.

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