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AVIATION WEEK

& SPACE TECHNOLOGY

**Launch
On Demand
Gets Real**

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Aeronautics
China Rises,
U.S. Pulls Back

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Grading Ortberg's
First Year at Boeing

D.C. Midair Collision
Troubling Truths



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Automation

Learn How Rockwell Automation Powers Commercial Space Launch Success

As today's space launches grow more frequent and diverse, companies are using advanced manufacturing, automation, and digital tools to launch faster, cheaper, and more reliably. Aviation Week spoke with Rockwell Automation experts about the tech driving these changes.

Q Aviation Week: What are today's space industry business drivers?

A Richard Butler: Demand is surging as space launch companies race to deploy satellite constellations. Launch providers must deliver more frequent, safer, and cost-effective missions which forces them to rethink everything, from rocket system design and manufacture to launch operations. Behind every successful launch lies a complex network of industrial architectures and data systems, simulation environments, and data-driven platforms that enable speed, precision, and resilience.

Glenn Reis: Government-led space programs have given way to a full-fledged commercial market, and Wall Street is watching. An Aviation Week study projects the global space economy will reach \$994 billion by 2033, fueled by heavier and more diverse payloads and associated launch capacity. To reassure investors, providers must prove they can consistently deliver on-time, on-budget capabilities. The accelerated adoption of digital technologies is essential to compress design-to-production cycles for vehicles, infrastructures, and payloads.

Q AW: How is automation advancing the space industry and helping companies meet these challenges?

A GR: Digital transformation and automation means IT/OT convergence—bringing together information systems and operational technologies. That convergence happens through container-

based IoT platforms, PLM applications, and industrial control systems. Add AI and machine learning, and you get a smarter, more agile digital enterprise that supports today's launch demands

Kalypso, Rockwell's digital-solutions arm, delivers scalable architectures that improve visibility, safety, and repeatability from fueling and payload prep to ground system control.

RB: It starts on the factory floor. To launch faster, you must build engines, boosters, and payload systems faster without sacrificing precision or quality. Automation makes that possible by focusing on safety and quality that carries through to the launch pad.

Launch pads operate like factories, too. Delays are costly. Automation enables rapid, safe responses to weather, system alerts, or mission-profile changes. It also uses real-time alarm management and predictive analytics to prevent delays across factories, assembly bays, or launch pads.

Q AW: How does the data you collect translate into predictive insights and Digital Engineering benefits?

A GR: This is where automation and data science meet. Prediction starts with understanding situational awareness which requires a robust enterprise data model—organizing data close to its source, at the edge, contextualizing it with data across the enterprise. Then, it uses AI and machine learning to identify patterns and anomalies that enable actionable insights and rapid decisions.

Digital twins and virtual test environments also

harness large volumes of contextualized data to help de-risk vehicle and infrastructure designs before they're produced and placed into service. This alignment between design and manufacturing helps you go faster, reduce rework, and deliver higher-quality systems.

RB: With all that data flowing through control systems, cybersecurity becomes critical. Years ago, these systems were isolated functions—high security but business limiting since data wasn't reaching the right people. Now, to be competitive, data must be captured, requiring network expansion to the edge. Rockwell Automation leads in securing operational technology—those control layers at the heart of manufacturing and launch operations.

Q AW: What strategic insights do Rockwell Automation and Kalypso offer?

A RB: The industry is shifting toward modular, repeatable launch architectures, and automation is the enabler. Far from being a bolt-on, industrial automation is a foundational enabler of cost-effective operations, resilience, and launch readiness.

The future depends on smart integration of OT/IT, edge computing, and AI-driven insights. What we do for space launch providers is like what we do for commercial aircraft—safety requirements are comparable for producing quality, safe and reliable rockets, payloads and satellites.

GR: Kalypso provides consulting and systems integration expertise for a broad range of digital solutions. We tackle the toughest operational challenges for our clients and apply deep domain expertise to solve them. We start with business strategy, then build operational and data security components and processes. We integrate and address multiple challenges simultaneously in one of the most heavily regulated technological environments.

Rockwell Automation and Kalypso help clients develop end-to-end digital strategy and solutions that link supply chain, production, and launch systems into a common framework. We don't just deliver hardware and software—we deliver digital capabilities to power growth in commercial launch services.

