ODYS AVIATION AND MOTION APPLIED ANNOUNCE ENGINEERING COLLABORATION TO DELIVER FLIGHT-READY HYBRID-ELECTRIC PROPULSION

News / Manufacturer

Odys Aviation announced a strategic engineering collaboration with Motion Applied to advance a next-generation hybrid-electric propulsion architecture for advanced flight applications. Under the terms of the partnership, Motion Applied's proven silicon carbide inverter platform, the AMPEX MCU-600, will be integrated with Odys' family of high-speed generator units to form a certifiable, high-performance hybrid propulsion system for use in the company's Laila and Alta aircraft.

At the core of the system is MA' embedded software stack for hybrid systems coordination and aviation-level redundancy management. Integrated directly with the Odys hybrid controller, the architecture enables a tightly coupled turbine–generator–inverter closed-loop control system optimized for dynamic flight operations and capable of simultaneously supporting multi-winding fault isolation, graceful degradation, and continued operation under single-path failures. This integrated approach ensures the propulsion system can maintain controlled operation even under

fault conditions, an essential requirement for hybrid-electric aircraft operating in real-world environments.

AMPEX MCU-600 is fully compatible with Odys' high-speed generators, leveraging a production-proven inverter platform to de-risk development and accelerate time to a certifiable integrated motor-generator unit. By building on an established hardware and software base, the teams will reduce integration uncertainty while preserving performance headroom for future aircraft variants.

Beyond electrical performance, the AMPEX platform offers defined mechanical packaging and thermal interfaces that support compact system integration. Clear cooling boundaries and predictable thermal performance reduce integration risk, streamline aircraft-level packaging, and minimize downstream surprises during system validation and flight testing.

As Odys advances toward initial aircraft deliveries this year, working with established partners committed to joint engineering development has become central to the company's execution strategy. This latest collaboration reflects a shared commitment to joint development, aligning electrical, mechanical, and embedded software systems from the outset to accelerate the path to a flight-worthy, integrated solution.

Samir Maha, CEO of Motion Applied commented: "Hybrid-electric aviation will only succeed if every element of the propulsion system is developed together with absolute clarity of purpose. Our partnership with Odys Aviation reflects that mindset. By combining our inverter platform with their advanced generator technology, we are building the foundation for flight-ready hybrid propulsion that raises the bar for performance and safety across the industry."

James Dorris, CEO of Odys Aviation stated: "At Odys, we believe hybrid propulsion must be architected from the ground up as a unified system, not assembled from loosely connected components. Motion Applied brings a proven SiC inverter platform and embedded control stack that integrates seamlessly with our hybrid controller. Together, we are accelerating the path to a certifiable, resilient propulsion system as we move toward first aircraft deliveries."

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