



# HEKA

# PROSPECTUS

HEKA Aero LLC  
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## 1. EXECUTIVE SUMMARY

HEKA is at the forefront of engineering services and technology, leading the charge in aerospace, defense, and industrial sectors with a steadfast commitment to innovation and excellence. Founded by Christopher Marot, HEKA has established itself as a trailblazer in the industry, driven by a vision to deliver cutting-edge solutions that redefine standards and surpass expectations. Our journey began with the development of groundbreaking technologies like the dual tilt rotor system for unmanned aerial systems, setting new benchmarks for performance and reliability.

Under the leadership of Christopher Marot and Sandra Kinnaird, HEKA has assembled a team of seasoned professionals with unparalleled expertise across software, electrical, mechanical, and aerospace domains. With a collaborative approach and a focus on customer-centricity, we strive to exceed the needs of our clients and partners, delivering solutions that not only meet but exceed their expectations. As we continue to push the boundaries of engineering and technology, HEKA is poised to shape the future of aerospace, defense, and industrial markets, offering innovative solutions that propel industries forward and redefine what's possible. Join us as we embark on this journey of exploration and innovation, driving progress and shaping the landscape of tomorrow.



## 2. OUR BUSINESS

### 2.1 Our Story

HEKA traces its origins back to 2017, when Christopher Marot, fueled by a passion for engineering excellence, founded the company. Marot's extensive experience in aerospace solutions, particularly in unmanned systems, laid the foundation for HEKA's journey.

HEKA's first major success was patenting the dual tilt rotor system. Building on this accomplishment, the company's scope expanded into software, electrical, and mechanical engineering domains.

HEKA's commitment to innovation was further underscored by its involvement in high-profile initiatives like the Defense Innovation Unit's Hypersonic and High-Cadence Airborne Testing Capabilities program. Today, HEKA takes pride in its agility and expertise in aerospace and defense technology as well as its track record of delivering cutting-edge solutions.

Our story is one of relentless pursuit—a journey marked by innovation, resilience, and an unwavering commitment to pushing the boundaries. And as we continue to chart new horizons, our resolve remains stronger than ever, driving us toward a future defined by limitless potential.



## 2.2 Mission, Vision, and Values

### **Mission**

*To deliver superior technology and services to industry partners in an agile, customer-centric fashion, bringing products to market faster.*

### **Vision**

*To be a world-class solutions provider in aerospace, defense, and transportation markets, utilizing cutting-edge technologies.*

### **Values**

*Client Satisfaction First, Solutions-Oriented Approaches, Team-Centric Work Organization, Continuous Improvement.*



## 2.3 Leadership and Team

### Leadership and Team

At HEKA, our success is catalyzed by an exceptional blend of visionary leadership and a dedicated team of professionals committed to excellence.

#### **Christopher Marot (CEO, President):**

Christopher Marot stands at the helm of HEKA, steering our course with a potent mix of expertise and innovation. A graduate of Florida Tech with a Bachelor of Science in Applied Mathematics and Computer Engineering, Marot's journey into the aerospace and defense industry began with a passion for embedded software and electronics. Over close to 25 years, he has left an indelible mark on the industry landscape, collaborating with titans such as Boeing, Airbus, and NASA.



Marot's leadership journey is a testament to his relentless pursuit of excellence and customer satisfaction. From co-founding Certon Software to spearheading Novel Engineering, he has consistently pushed boundaries, delivering groundbreaking solutions and fostering enduring partnerships. Marot's vision for HEKA Aero LLC is grounded in a commitment to disruptive innovation and a relentless focus on surpassing customer expectations.



### **Sandra Kinnaird (CFO, Director of Finance):**

Sandra Kinnaird brings over two decades of financial acumen and strategic foresight to HEKA. A seasoned professional with a knack for navigating complex financial landscapes, Kinnaird's journey from Fortune 500 companies to startup ventures has been marked by a relentless pursuit of excellence.



Kinnaird's tenure at HEKA is characterized by her unwavering dedication to financial integrity and operational efficiency. As CFO and Director of Finance, she plays a pivotal role in ensuring the company's financial stability, regulatory compliance, and strategic investment. Kinnaird's leadership is instrumental in driving HEKA's growth trajectory and fostering a culture of fiscal prudence and transparency.

### **Engineering Execution Team:**

HEKA's engineering execution team comprises a team united by a shared passion for innovation and excellence. Led by seasoned project managers and quality assurance experts, this dynamic cohort brings diverse expertise across software, systems, electrical, mechanical, and aerospace domains.

### **Operations and Business Development Team:**

Our operations and business development team serves as the driving force behind HEKA's growth and market expansion. From executive leadership to marketing, finance, and business development, this multifaceted ensemble orchestrates strategic initiatives, captures new business opportunities, and ensures alignment with our rigorous quality standards.



### 3. OUR TECHNOLOGY

At HEKA, we are at the forefront of technological innovation, pushing the boundaries to develop cutting-edge solutions that redefine industry standards and drive progress in aerospace, defense, and industrial sectors. Our comprehensive suite of proprietary technologies spans a diverse range of applications, from advanced modeling and simulation to groundbreaking power and propulsion systems, enabling us to address the most complex challenges with unmatched precision and ingenuity.

#### Modeling and Simulation:



**HEKALINK**

In an era where digital twin engineering processes are revolutionizing industries including but not limited to the defense industry, our HekaLink solution stands as a beacon of innovation. HekaLink is a solution for simulating aircraft and developing flight controls and ancillary aircraft systems. It is a 6 Degree-of-Freedom (6 DOF) simulator that exports control software (command and control, GNC, autopilot) to run onboard the aircraft. It is used to create a complete digital twin of an aircraft, develop the flight control software, test that software in SIL, MIL, and HIL environments, and generate the executable aircraft software. GE Aerospace / Innoveering is currently using it to develop hypersonic vehicles for the Air Force Research Laboratory and the DoD's Defense Innovation Unit.



This product is revolutionary because flight controls have never been developed in this fashion. Usually, disparate teams develop and test these systems independently in different environments, increasing costs and the time it takes to get the controls on an actual aircraft.





Now there is a plug-and-play solution that will save time and money on the development of flight control systems for any kind of aircraft. It is the software that drives the hardware with all the resiliency and reliability of the FCS of the past.

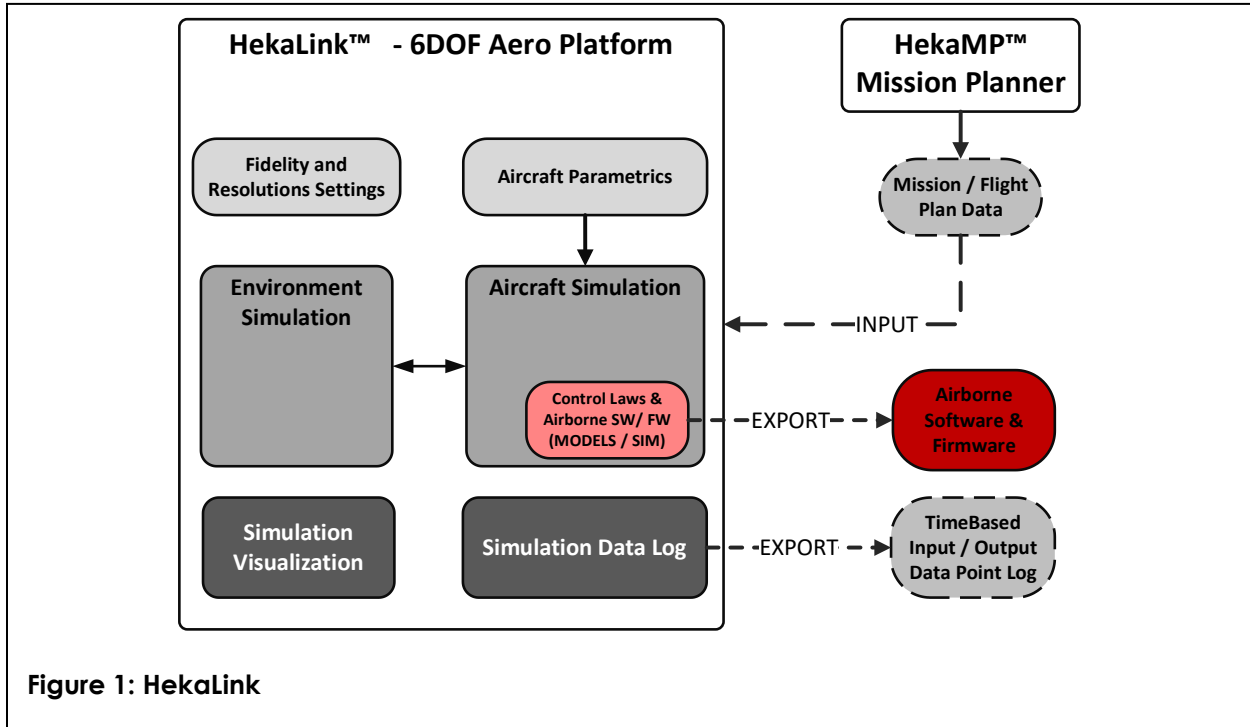
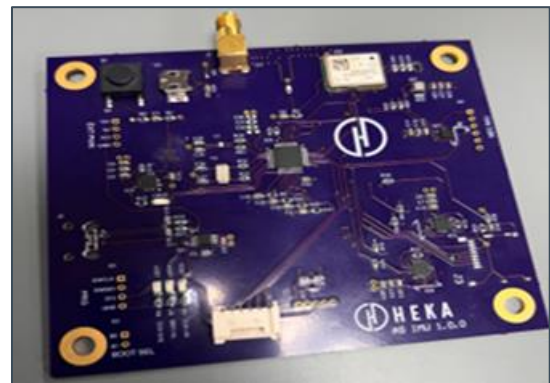


Figure 1: HekaLink

### Guidance, Navigation, Command, and Control (GNCC):

Guidance and navigation are responsible for knowing where that system is and where it should be going and is comprised of hardware and software solutions. The software solutions are designed and developed using the HekaLink software suite above.

GeoSense is HEKA's GPS-enabled position, navigation, and timing hardware solution. GeoSense provides real-time location data using MEMS sensors and GPS data fused and filtered with AI. This solution is currently being used by multiple customers and is slated for several DoD projects. Using Mems and AI,





GeoSense allows GPS-like precision in GPS denied environments, which is critical for the development of future defense technology.

## **Power & Propulsion:**

### ***Gimbal Ducted Fan***

HEKA's first patent award was for its Gimbaled Fan Technology, or Dual Axis Tilt Rotor technology. HEKA was the first to design, develop, test, and patent



dual-axis tilt proposals for aircraft. Today's modern tilt Aircraft, including eVTOL Air Taxis and Military Aircraft like the V-22 Osprey, use single-axis tilt propulsion. HEKA dual-axis tilt technology is the natural evolution for advanced maneuverability and stability, beneficial for eVTOL in urban environments.



### ***Battery Management System***

With the advent of the electrification age comes the demand for electric motor controls and battery management systems. HEKA's BMS Solution provides both charge and power supply for a multitude of battery chemistry. The BMS Solution is both modular and stackable, producing power output over a wide range of voltages and capacities. Its integrated computer reports status on the health and state of charge of all cells in the battery. It also provides remote power control and status reporting. HEKA's BMS is built with both ITAR as well as mission critical performance in mind. The current market for battery management systems that are ITAR compliant (no foreign unallowed parts) is extremely limited with high demand.

### ***Electric Engine Motor Controller***

HEKA's MotoIntelligence controller (MIC), provides electronic speed control, motor health, and status sense. HEKA's MIC is also built with both ITAR and mission critical performance in mind. The MIC



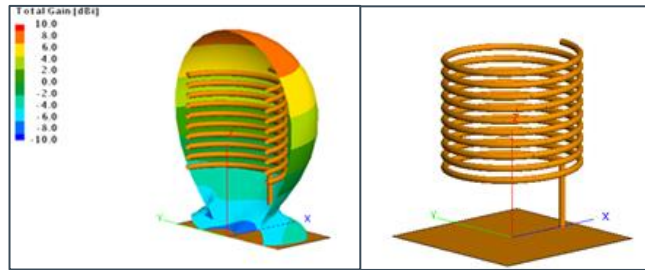
provides wireless and wired connectivity to control speed and power output, while reporting health and maintenance status.

### **Communication and Signal:**

#### **Lamprey**

Over the years, HEKA has accumulated radio technology and IP assets under the project name

Lamprey. Lamprey tech has been provided as solutions for challenges facing various DoD departments, including USSOCOM, the NSA, and the US Army. Lamprey tech includes HEKA's software-defined radio technology and its meta material antenna technology.



#### **SentryBravo**

Currently, under proposal for commercial customers, Lamprey Technology is included in HEKA's SentryBravo system used to track UAS (Drones) and Manned Aircraft equipped with ADS-B. This system provides situational awareness for the future UAM (Urban Air Mobility) /UATM (Urban Air Traffic Management) that includes future concepts like unmanned autonomous systems and eVTOL air taxis.

### **Foundational Technology:**

**HEKOS** HekOS is a certifiable safety-critical embedded Real Time Operating System (RTOS). Unlike Windows or Linux, RTOS ensures absolute timing and fault handling. All safety-critical applications must run on RTOS or have absolute determinism and time control. All HEKA-developed embedded applications and avionics run on HekOS. By providing HekOS free of charge, HEKA displaces industry players, including Greenhills Integrity, LynxOS, and Wind River's VxWorks. These vendors charge \$100,000 to millions for low-volume, product-specific licensing.



## 4. OUR SERVICES

HEKA Aero LLC offers an extensive array of specialized engineering services tailored to meet the diverse needs of our clients across aerospace, defense, and industrial sectors. With a deep commitment to excellence and innovation, we leverage our expertise and cutting-edge technology to deliver solutions that drive success and propel industries forward.

### **Software Engineering:**

Our software engineering division combines engineering principles with computer science foundations to develop, maintain, and test software applications of unparalleled quality. From embedded software for avionics systems to artificial intelligence and machine learning algorithms, our team is equipped to tackle even the most complex challenges.

### **Electrical Engineering:**

In the realm of electrical engineering, HEKA excels in designing and implementing systems that utilize electricity, electronics, and RF electromagnetics. Our solutions encompass a broad spectrum, including circuit design, power supplies, control systems, and instrumentation, ensuring optimal performance and reliability.

### **Mechanical Engineering:**

HEKA's mechanical engineering expertise extends to the design, analysis, design for manufacturing, and maintenance of mechanical systems across various industries. Utilizing advanced tools like computer-aided design (CAD) and finite element analysis (FEA), we deliver robust solutions for machinery, aircraft, robotics, medical devices, and more.

### **Aerospace Engineering:**

With a focus on aeronautics and astronautics, our aerospace engineering services cover the entire lifecycle of aircraft and spacecraft development. From initial design and testing to production and maintenance, we ensure the integrity and



performance of aerospace systems in even the most demanding environments.

### **Systems Engineering:**

HEKA specializes in systems engineering, offering an interdisciplinary approach to designing, integrating, and managing complex systems. Our expertise spans across software, mechanical, electrical, and aerospace domains, enabling us to develop holistic solutions that meet the unique requirements of each project.

### **Project Management:**

At HEKA, we understand the importance of effective project management in delivering successful outcomes. Our project managers oversee projects with meticulous attention to detail, ensuring timely execution, budget adherence, and stakeholder satisfaction throughout the project lifecycle.

### **Quality Assurance:**

Quality assurance is paramount in our operations, and our dedicated team of QA engineers ensures that our products and services consistently meet the highest standards of quality. Through rigorous testing, analysis, and improvement processes, we guarantee the reliability and performance of our solutions.

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***As a trusted partner in engineering excellence, HEKA remains committed to driving innovation, delivering exceptional results, and exceeding the expectations of our clients worldwide.***



## 5. BUSINESS MODEL AND INFRASTRUCTURE

At HEKA, we pride ourselves on fostering a robust business model and infrastructure that not only drives our operational excellence but also serves as a testament to our commitment to innovation, reliability, and customer satisfaction. Our holistic approach encompasses every aspect of our organization, from strategic planning to execution, ensuring that we deliver unparalleled value to our clients while maintaining the highest standards of integrity and efficiency.

### **Business Development, Sales, and Marketing:**

Our business development, sales, and marketing strategies are meticulously crafted to not only identify emerging opportunities but also to cultivate enduring relationships with our clients. Leveraging our extensive experience and industry insights, we engage in proactive outreach, strategic partnerships, and targeted marketing initiatives to expand our market presence and capture new business opportunities. Through platforms such as GSA MAS Schedule, GovWin, Teaming Pro, and HubSpot, we streamline our business development efforts, enabling us to stay ahead of market trends and tailor our solutions to meet the evolving needs of our clients effectively.

### **Organizational Methodology:**

HEKA has a clear process for delivery of our engineered solutions. We begin every project with a cooperative discovery where we document the customers' needs, wants, and expectations. From this we produce a project plan that ensures a timely, coordinated delivery of systems that meet or exceed the requirements needed for success. We utilize a blended Agile-Waterfall project management methodology. While Waterfall is a linear and sequential design process, Agile promotes adaptive planning and encourages rapid responses to change. Merging the two offers a structured yet adaptable approach to management.



### **Internal Tools:**

To support our operations and facilitate collaboration across our teams, we leverage a suite of sophisticated internal tools and technologies. From organizational command media to project management platforms like Jira and Confluence, we empower our employees with the necessary resources and tools to streamline workflows, enhance communication, and drive productivity. These internal tools not only facilitate seamless information sharing but also enable real-time collaboration, allowing us to efficiently coordinate our efforts and deliver superior outcomes for our clients.

### **Human Resources:**

At the heart of our success lies our exceptional team of talented professionals, whose expertise, dedication, and passion are instrumental in driving our growth and innovation. Recognizing the pivotal role of human resources in our organization, we prioritize the acquisition, development, and retention of top-tier talent. Through comprehensive recruitment and staffing strategies, we attract individuals who embody our core values and align with our strategic vision, fostering a culture of diversity, inclusivity, and collaboration. By investing in ongoing training, professional development, and employee well-being initiatives, we ensure that our team remains at the forefront of industry trends and technologies, empowering them to deliver exceptional results for our clients consistently.

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***In essence, our business model and infrastructure at HEKA are designed to uphold the highest standards of excellence, integrity, and innovation across every facet of our operation. We remain steadfast in our commitment to driving success and delivering unmatched value to our clients and stakeholders.***





## 6. STANDARDS AND COMPLIANCE

At HEKA, we hold ourselves to the highest standards of quality, safety, and regulatory compliance to ensure the utmost reliability and trustworthiness in all our endeavors. We proudly adhere to globally recognized industry standards and certifications, underscoring our unwavering commitment to excellence across every facet of our operations.

### **ISO9001:**

As an ISO 9001 certified organization, HEKA is dedicated to implementing and maintaining robust quality management practices that consistently exceed customer expectations. Our adherence to ISO 9001 standards signifies our relentless pursuit of continuous improvement and customer satisfaction, instilling confidence in the reliability and effectiveness of our processes.

### **AS9100:**

HEKA maintains AS9100 certification, tailored specifically for the aerospace industry, to meet the exacting quality management requirements of aviation, space, and defense products and services. This certification underscores our steadfast dedication to excellence, risk management, and product safety, ensuring that our solutions consistently meet the stringent standards of the aerospace sector.

### **CMMI:**

HEKA is actively pursuing CMMI (Capability Maturity Model Integration) Level 3+ rating, demonstrating our steadfast commitment to process improvement and organizational excellence. CMMI provides us with a structured framework for enhancing our capabilities in delivering high-quality, predictable, and efficient engineering solutions, enabling us to respond to our clients' evolving needs with agility and precision.

### **DCAA:**

As a trusted partner of the United States Department of Defense (DoD), HEKA adheres rigorously to the regulations set forth by the





Defense Contract Audit Agency (DCAA). Our financial accounting practices are fully compliant with DCAA requirements, ensuring transparency, accuracy, and accountability in all our financial operations. This compliance enables us to engage directly with the US Government and participate in defense-related contracts and projects with utmost integrity and confidence.

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***At HEKA Aero LLC, our steadfast commitment to adhering to these rigorous standards and certifications underscores our dedication to quality, safety, and regulatory compliance, earning us the trust and confidence of our clients as their preferred engineering partner of choice.***



This prospectus outlines **HEKA Aero LLC**'s commitment to innovation, excellence, and customer satisfaction. With a dedicated team, cutting-edge technology, and robust business model, HEKA is poised for success in the aerospace, defense, and industrial sectors.