

MIMICRY INTERNATIONAL

Driven by AI — A Vizaura Company

EXECUTIVE ONE-SHEET

Four-dimensional AI-driven detection architecture for early warning of self-accelerating thermal decomposition in fertilizer storage and transport — preventing catastrophic explosions and protecting critical infrastructure worldwide.

THE PROBLEM

Ammonium nitrate explosions — from Texas City (1947) to Toulouse (2001) to Beirut (2020) — have killed thousands and caused billions in damage. Analysis of **51+ major incidents** across **20+ countries** reveals most were preceded by hours or days of detectable thermal decomposition. Current single-threshold alarm systems detect too late. The critical variable is **time**.

THREE-LAYER ARCHITECTURE

Trinity — Command & Intelligence

Data fusion, swarm coordination, hazard decision logic, risk heatmaps, and adaptive sampling across the entire detection network.

Virtual Mimic — Dual Digital Twin

State estimation, decomposition prediction, cyber integrity monitoring, telemetry protection, and model-based inference engine.

Physical Mimic — Autonomous Sensor Swarm

Nanofiber-based multi-modal sensors, hyperspectral imaging, acoustic detection, thermal mapping, and coordinated drone swarm.

MARKET & FUNDING ALIGNMENT

Metric	Value
DOD AI Budget	\$25B
Autonomous Systems	\$13B
Incidents Analyzed	51+

Directly aligned with **DARPA AIE**, **SBIR/CDAO**, and **DIU 2.0** funding priorities for AI-enabled autonomous systems, swarm technologies, and rapid commercial technology adoption.

PAST PERFORMANCE

FBI / TSWG — Specialized Workstation Delivery

Principal Investigator designed and delivered a specialized workstation system for the FBI's Counterterrorism and Forensic Science Research Unit (CFSRU) at Quantico, VA — 10 phases, 3 years, on time, within budget.

EXECUTIVE TEAM

Mark Allen Lanoue — *Chief Executive Officer* NASA Space Technology Hall of Fame inductee. Decades of executive leadership in breakthrough technology commercialization.

Jeff W. Meredith — *President & CFO* Finance and grants management executive overseeing millions in R&D funding with deep compliance and stewardship

experience.

Christian Wentz — *Chief Technology Officer* Technology founder with 20+ years in network engineering, cybersecurity, resilient infrastructure, and AI adoption.





Shelby Dawn Osborne — *VP of Government Relations* Cross-sector government relations spanning NASA, political offices, and academic institutions.

Bernard Prioux — *VP of European Affairs* France-based executive with international business development across luxury brands and European public-sector dealmaking.

ACADEMIC & RESEARCH PARTNERS

- UCF CREOL (Optics)
 - UCF Computer Science
 - University of Southern Mississippi
 - INRES (France)
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LOCATIONS

-  NASA Stennis Space Center, MS — 1103 Balch Blvd, Bay Saint Louis, MS 39529, Room 146F
 -  Springdale, AR — 3150 Birch Place, Springdale, AR 72762
 -  San Francisco, CA — 455 Market St, Suite 1940, San Francisco, CA 94105
 -  Champs Sur Yonne, France — 8 Quai Saint Louis, 89290 Champs Sur Yonne
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