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Cyber, AI, and Network Awareness Systems for Complex Defense Environments

Overview:

Applied Visions, Inc. (AVI) is a software engineering and artificial intelligence development firm with more than 35 years of experience building systems for complex, data-driven environments. Through its Aerospace & Defense Group, AVI develops secure, scalable platforms for cybersecurity, AI-driven analytics, and real-time data visualization.

AVI has built systems that detect and map wireless cyber assets (**MeerCAT** / **Flying Squirrel**), aggregate and analyze large-scale vulnerability data (**Code Dx**), and identify security risk across complex software environments (**ASTAM, Attack Surface Detector**). Additional decision support platforms such as **AViSOR** / **LAREDO** support analysis of environments, movement and behavior, Deucalion supports operational risk across distributed networks, and 9-HI supports project development risk identification, analysis and remediation through all developmental phases.

Across these efforts, AVI focuses on turning complex, distributed data into actionable insights—helping operators understand their environment and maintain situational awareness to identify threats, and make faster, more informed decisions.

What we have built

Cybersecurity & Software Assistance

Systems that identify, correlate, and prioritize risk across complex software environments.

1. **ASTAM** – Automates application security testing and risk measurement, enabling continuous, scalable analysis of software vulnerabilities across complex systems.
2. **Attack Surface Detector** – Identifies and maps exposed system components, helping organizations understand and reduce their operational risk footprint.
3. **Code Dx / Code Pulse / Code Ray** – Correlates results from multiple SAST & DAST application security testing tools to prioritize and streamline vulnerability remediation at scale.
4. **ICAS-GESTALT: Integrated Cyber Analysis System** – Integrates and analyzes large volumes of cyber data to support threat detection and operational security analysis.
5. **VHP (Vulnerability History Project)** – Provides deep, lifecycle-level insight into real-world vulnerabilities, enabling better understanding of how security failures emerge and evolve.

Network Awareness & Wireless Analysis

Tools that detect, map, and assess activity across wireless and distributed cyber environments.

1. **MeerCAT-FS / Flying Squirrel Suite** – Visualizes and correlates wireless, mobile, and network data to provide real-time awareness of cyber assets, vulnerabilities, and communication patterns.

AI & Data-Driven Analysis

Platforms that analyze large-scale datasets to surface patterns, anomalies, and operational insight.

1. **9-HI** – Combines human expertise with AI agents to guide decision-making, reduce risk, and improve outcomes across complex projects and operational workflows.
2. **FileTrac** – Applies AI to automate document analysis and workflow decisions, enabling faster, more consistent handling of high-volume operational data.
3. **Kompar** – Provides a structured, data-driven framework for evaluating and comparing software security tools, supporting informed technology selection and risk assessment.

Mission Analysis & Decision Support

Systems that model behavior, movement, and operational risk to support planning and response.

1. **TTWCS / TTAPS → r AViSOR / LAREDO** – Models movement, behavior, and operational constraints to support route planning, threat avoidance, and mission decision-making for convoys and dismounted troops.
2. **Deucalion** – Supports proactive network defense planning and analysis by modeling cyber threats and their potential operational impact.

Training, Human Factors & Simulation

Interactive systems that improve decision-making, user behavior, and operational readiness.

1. **Samaritan (Human Factors)** – Analyzes the relationship between developer behavior and software vulnerabilities to improve security outcomes through human-centered insights.
2. **CyberWise / Comic-BEE** – Uses interactive, scenario-based training to teach cybersecurity concepts and decision-making through simulated consequences.
3. **ORNinja** – Applies gamified training techniques to accelerate learning and improve retention in complex, real-world operational environments.

Data Visualization, Logistics & Operational Platforms

Platforms that transform complex data into usable insight across logistics, environmental, and operational systems.

1. **CRF / Opal Optix** – Processes and analyzes large-scale visual datasets using computer vision and AI, enabling users to generate and interpret complex imagery with minimal expertise.
2. **Oasys / OLX (Supply Chain Management)** – Provides end-to-end visibility and coordination across logistics networks, transforming complex shipment data into actionable operational insight.
3. **Maestro (IoT / SDS)** – Enables low-power, embedded systems to operate efficiently at the edge, supporting real-time data processing in constrained environments.
4. **CleverWorks / CleverCAD** – Delivers real-time analytics and visualization for transit systems, improving operational awareness and decision-making in dynamic environments.

Why Applied Visions

Applied Visions brings more than three decades of experience supporting programs across DoD, DHS, DARPA, and the Intelligence Community. Our teams combine deep expertise in artificial intelligence, cybersecurity, and data visualization with a proven ability to successfully transition research into operational environments.

We build full lifecycle solutions—from research and prototyping through deployment and sustainment—designed to operate in complex, data-rich environments. Our work emphasizes human-centered design, responsible AI governance, and decision-support systems that deliver clear situational awareness in complex environments. We build platforms that help operators understand what is happening, identify objectives and risks, and plan effective responses. By combining advanced analytics, visualization, and intuitive system design, we enable users to move from insight to action—supporting informed decision-making and successful outcomes across operational and warfighting environments.