Open Architecture Ecosystems for CUAS

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Current CUAS Challenges

- The proliferation of Unmanned Aircraft Systems (UAS) has become a critical element in modern military strategy, demonstrating their disruptive potential in conflicts from the Middle East to Ukraine
- As UAS evolve into more sophisticated platforms, they pose significant asymmetric threats that challenge conventional defense mechanisms
  - Small, low-cost drones are increasingly lethal but difficult to detect
  - Ability to swarm stresses current defense systems
  - Cost per kill with fielded effectors is unsustainable
- To counter this, the development of an open architecture Counter UAS (CUAS) ecosystem is essential
  - Facilitates the rapid integration and deployment of emerging technologies, offering a decisive advantage for warfighters by staying ahead of evolving adversarial advancements
  - Proprietary systems restrict adaptation and therefore jeopardize operational effectiveness against rapidly advancing UAS threats
- An ecosystem approach provides a scalable, tailorable and adaptive capability to counter emerging threats

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Multi-Domain Counter UxS

- Operations in Ukraine, Israel and the Red Sea highlight the need for a Counter UxS capability
- Each use case is unique and covers a wide variety of mission sets
  - Installation defense (kinetic and non-kinetic)
  - Counter drone defense for maneuver forces
    - Mounted systems for area defense
    - Dismounted systems for point defense
  - Defense of commercial shipping and naval vessels
    - Address Cost per Kill challenges
    - Require a multi-domain approach – UAS, USV, and UUV combined attacks
- All these necessitate a tailorable Open Architecture CUxS ecosystem
  - All for advancements in artificial intelligence and machine learning, quantum computing, and energy-directed systems to be integrated at lower cost and risk
  - Encourages contributions from both industry and academia
    - Can exploit a broader range of technological solutions
    - Drives down costs and spurs rapid technical advancement

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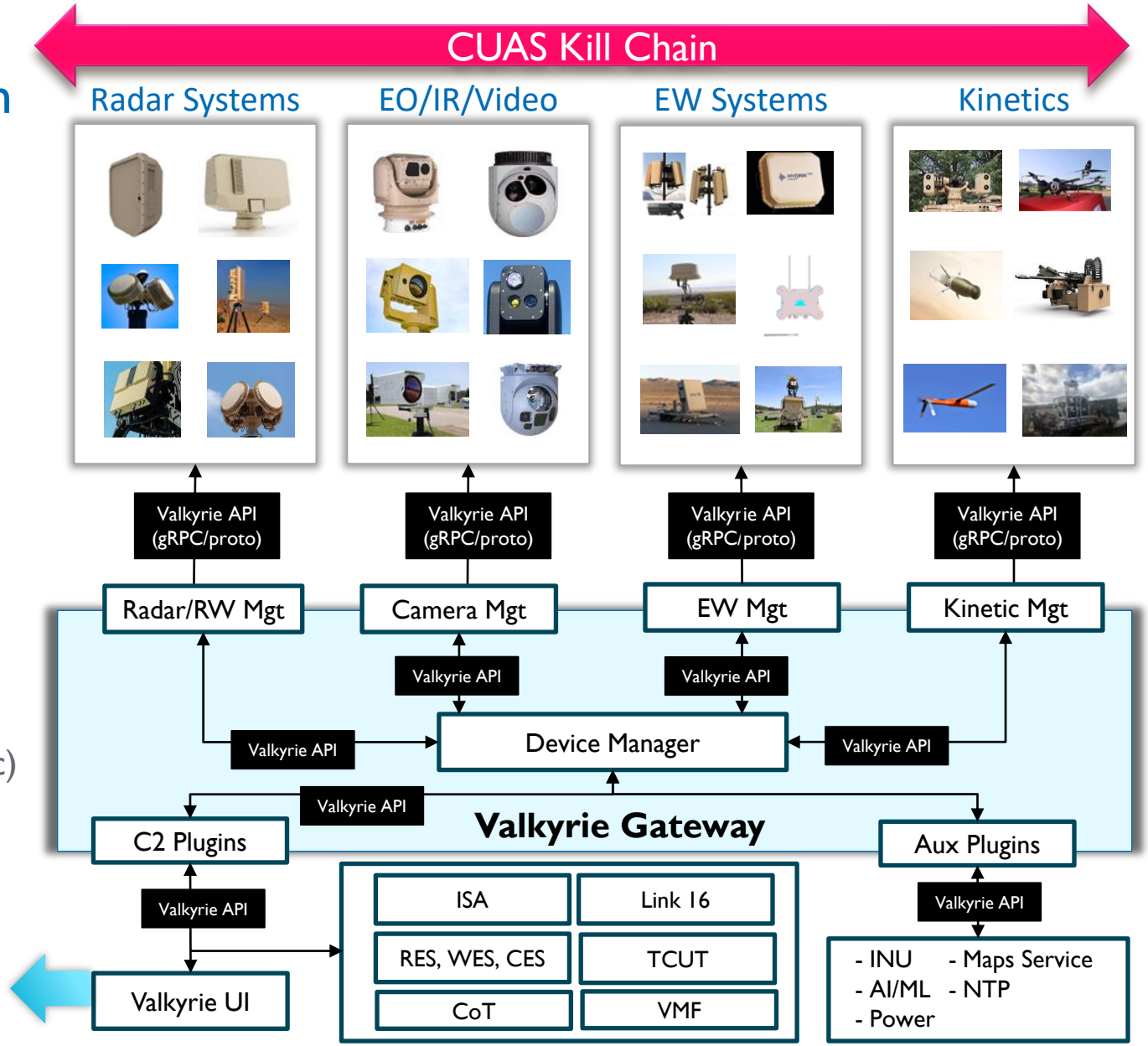
SAIC's CUAS Open Architecture Ecosystem

- SAIC's Valkyrie CUAS Gateway is a **fully open system digital backbone** architecture
  - Modular Open Systems Architecture (MOSA) – compliant.
  - Single Application Programming Interface (API) that is documented and releasable to government and industry
  - Proven ability to integrate systems with open APIs into our ecosystem in less than 30 days
  - Numerous MIL-STD interfaces – Link 16, CoT, VMF, WES, etc)
- All architectural components are **containerized and independent** to support **modular severability and portability**



SAIC's CUAS Architecture allows for rapid & open systems integration

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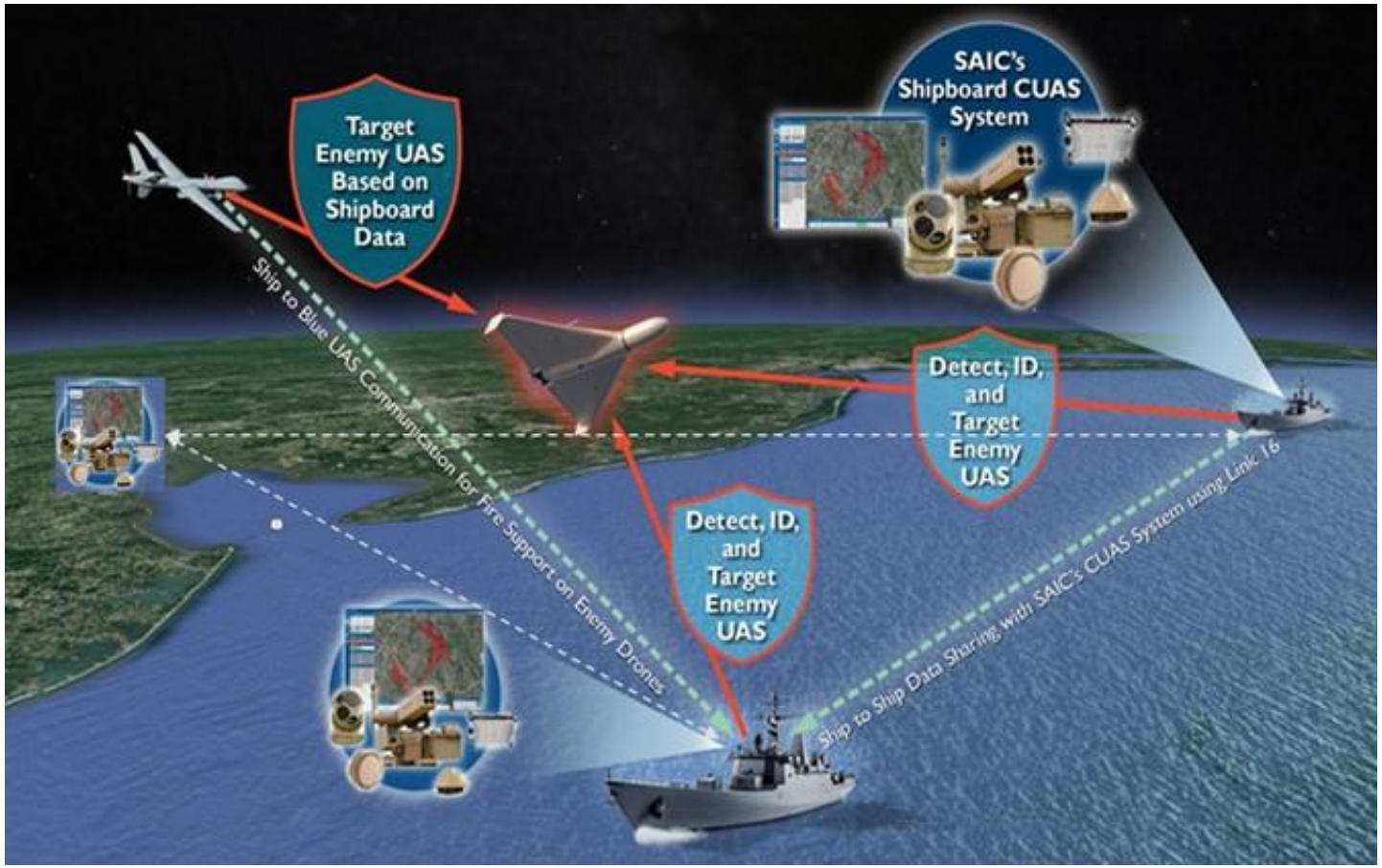
SAIC's Multi Domain Integrated CUAS/CUxS

- **Scalable -** open architecture platform integrates with 40+ C-sUAS sensors and effectors
- **Extensible -** supports Land, Air, and Sea operations with centralized or de-centralized command and control
- **Connected -** Fully interoperable using standard message sets used within US and NATO partner organizations for multi-domain interoperability
- **Unified –** standardized interface allows for common integrated node and user experience and mission execution across all domains
- **Real – Time Data Analysis –** AI/ML based data analytics to support detailed threat analysis, data trends, and forensic reporting
- **Ease of Use -** automated MOTL for non-expert operators with simple button controls and quick reference



SAIC's CUAS Ecosystem Provides Multi-Domain Sensor to Shooter with Non-Kinetic and Kinetic Capabilities

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