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CPE ST3
ARMY TRAINING VERSE

A PERSISTENT LIVE VIRTUAL CONSTRUCTIVE (LVC) / DIGITAL TWIN FRAMEWORK FOR DECISION DOMINANCE

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From Fragmented M&S to a Shared Army Verse

- Today: Separate repositories, formats, tools, and workflows limit reuse.
- Programs often rebuild capabilities and retranslate data that already exists.
- Army Verse treats simulation as a shared service: persistent, composable, reusable.

Previous State: Command-Unique / Siloed M&S Environments

	Environment	Training	Testing	Analysis	Experimentation	Performance
JPEO A&A			X	X	X	X
JPEO CBRN			X	X	X	X
PEO ACWA			X	X	X	X
PEO AVN			X	X	X	X
PEO CS&CSS			X	X	X	X
PEO C3N			X	X	X	X
PEO Enterprise			X	X	X	X
PEO GCS			X	X	X	X
PEO IEW&S			X	X	X	X
PEO M&S			X	X	X	X
PEO STRI		X	X	X	X	X
PEO Soldier			X	X	X	X

*Fragmented * Stovepiped * Duplicative*

Army Verse End State: Shared M&S Ecosystem

*Persistent * Composable * Reusable*

End State
Common services, cataloging, data pipelines, AI workflows, and multi-engine execution.

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The Current-State Challenge

Today's modeling and simulation environment is fragmented across organizations, tools, repositories, and workflows.

Current Challenge	Effect	Army Verse Response
Siloed repositories	Low discovery and reuse	Shared platform and Marketplace
Non-standard workflows	Difficult integration	Open APIs and common services
Lossy conversion	Rework and reduced fidelity	Managed translation pipeline
Manual asset preparation	Long delivery timelines	Automated / semi-automated workflows
Weak digital thread	Slow transition to mission relevance	End-to-end data-to-simulation pipeline

Design Principle: Build Once - Govern - Catalog - Reuse

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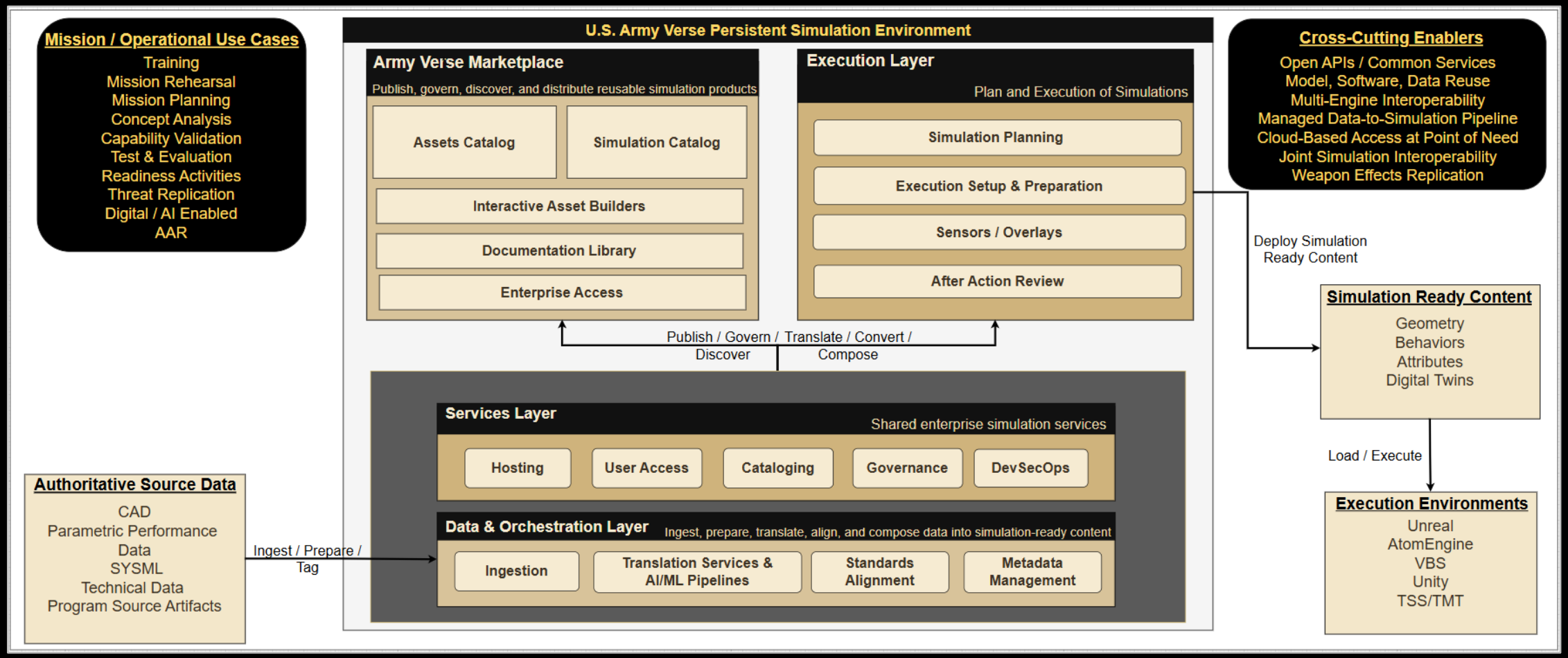
Army Verse Reference Architecture



Services Layer

Hosting, user access, cataloging, governance, Marketplace, DevSecOps.

Data & Orchestration

Ingestion, metadata, standards alignment, translation, AI/ML workflows.

Execution Layer

Engines, overlays, sensor-driven representations, and after action review.

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How Data Moves Through the Army Verse

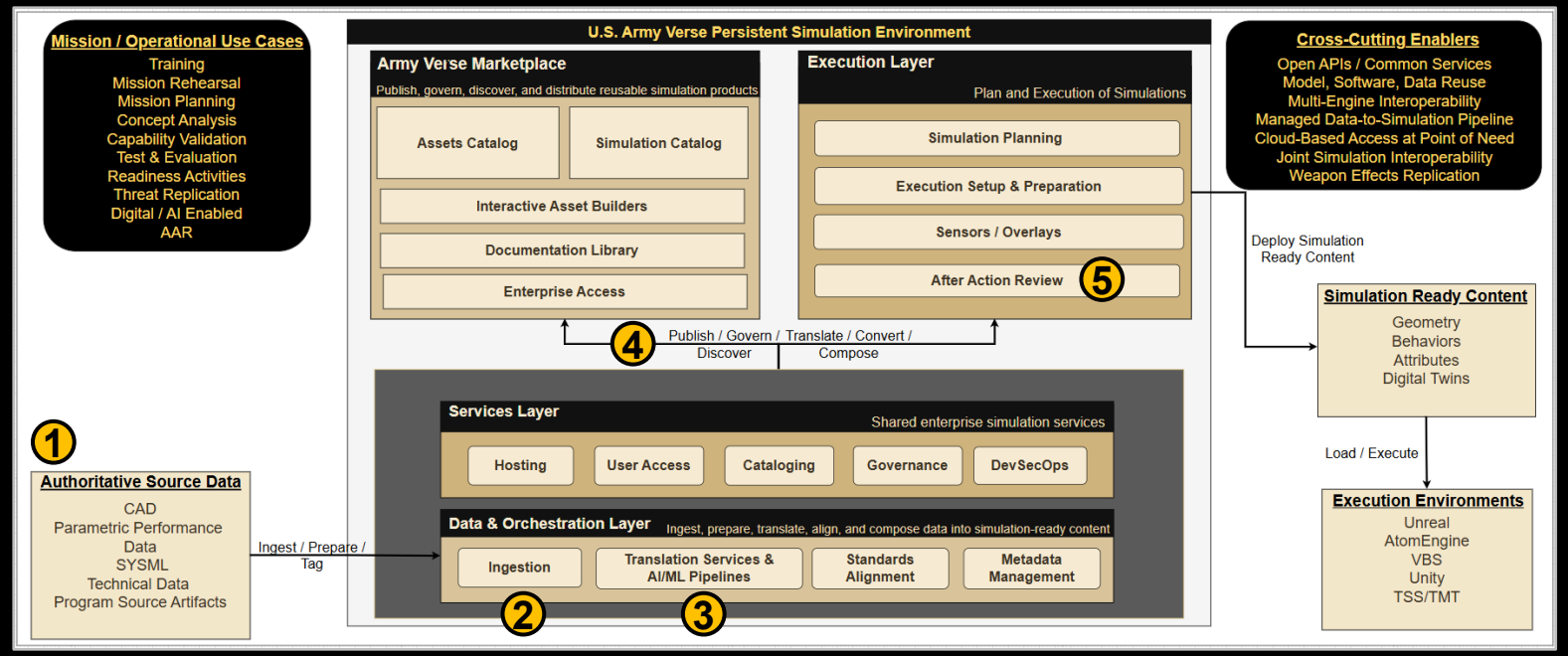
1. Trusted sources provision schematics, performance data, SysML artifacts, and imagery.

2. Artifacts are ingested, tagged, and governed for traceability.

3. Translation services convert source data into geometry, attributes, and behaviors.

4. Assets are published to the Marketplace and staged for execution.

5. Exercise data feeds digital and AI/ML-enabled after action review.



Persistent digital thread: source data → simulation formats / output → assessment

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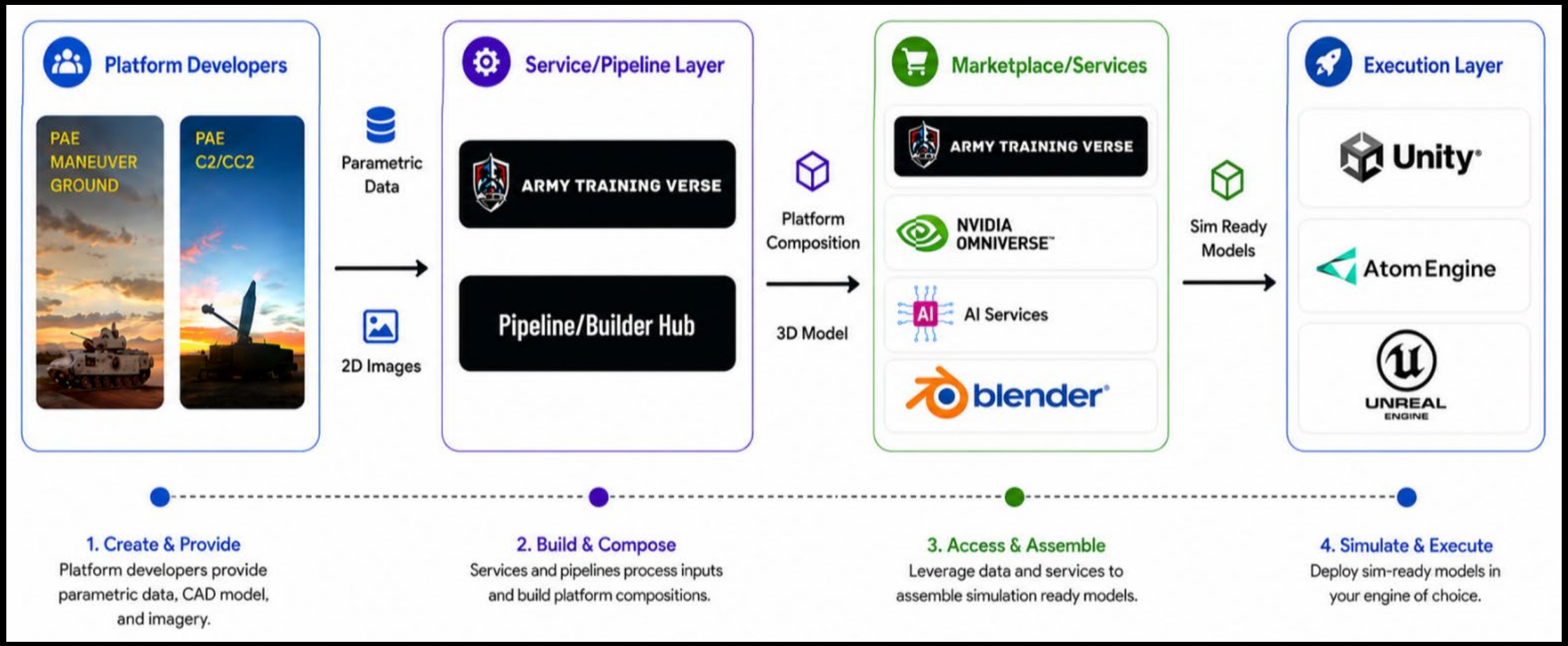
XM30 Authoritative Data-to-Simulation Pipeline



Outcome: reusable geometry + attributes + behaviors across AtomEngine, Unreal, Virtual Battlespace (VBS), Unity, and compatible game engines.

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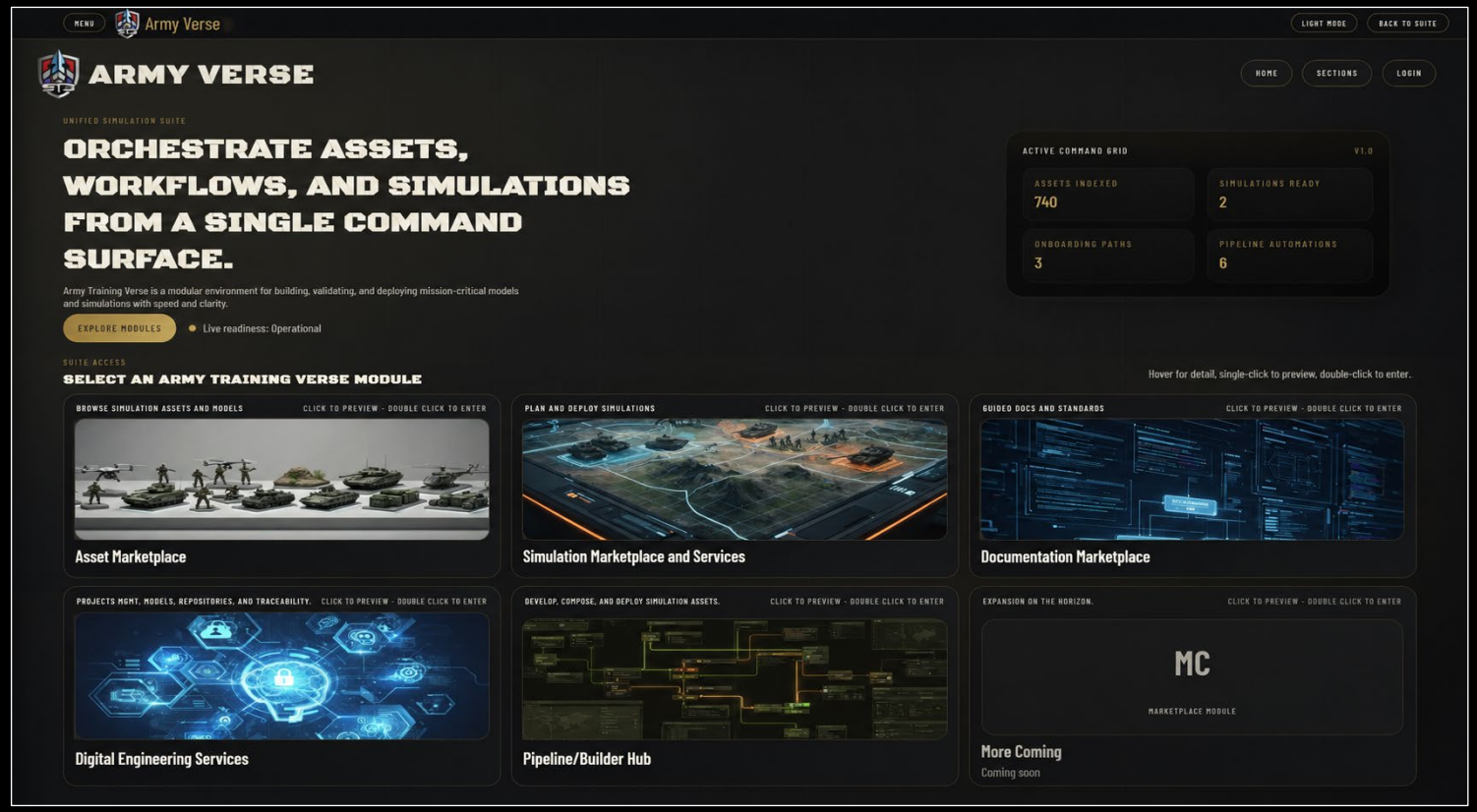
Army Verse: More Than a File Repository

- Catalogs simulation assets, standards references, development tools, and services.
- Adds metadata and governance so assets can be managed and shared across portfolios.
- Supports active composition: teams assemble reusable components instead of starting from scratch.



XM30 Example
Models, parametric attributes, behaviors, and metadata are published once and reused by other programs and scenarios.

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Operational & Training Use Case: UAS Integration

Army Verse enables reusable Unmanned Aircraft System (UAS) models across live and virtual training exercises.

Commercial UAS Data
Performance + vulnerability data

→

Model + Scenario Build
Visual rendering, behaviors, scenarios

→

Army Verse Marketplace
Catalog, govern, publish, reuse

→

Training Exercise
Weapon, Counter-UAS (C-UAS) interceptor, hostile threat

What changes with Army Verse

- Moves beyond vendor-specific, siloed UAS training systems.
- Allows new UAS platforms to be inserted as they are developed.
- Uses reusable platform data, models, visual rendering, and scenarios.
- Supports Soldier detection and response training across LVC environments.

Desired Outcome: UAS as weapon, C-UAS interceptor, and hostile threat are cataloged and reused via Army Verse.

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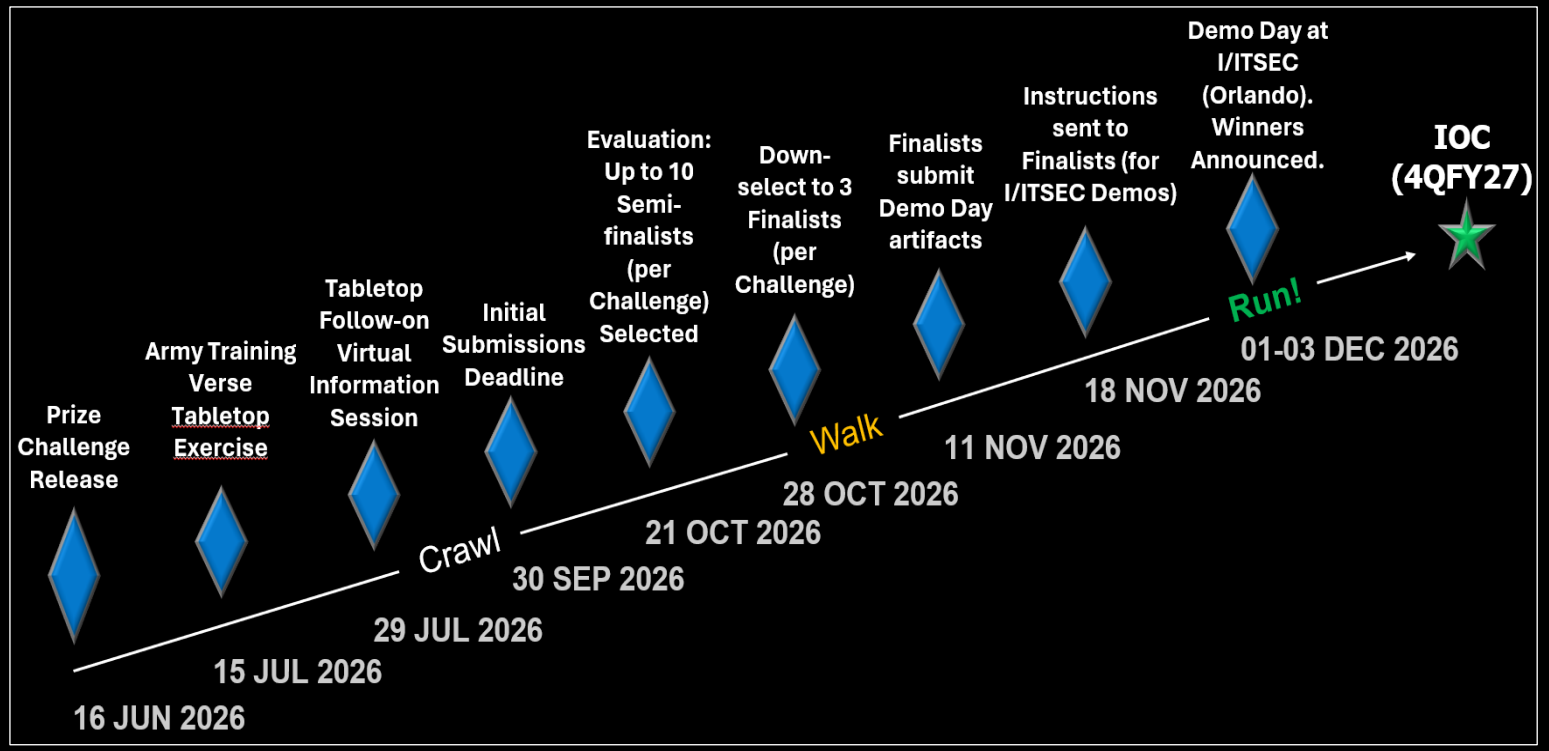
Partnerships and Roadmap to IOC



- CPE ST3 is coordinating across ASA(ALT), XM30, FLRAA, CAA, DEVCOM, Air Force Gemini, industry, and academia.
- Near-term focus: hosting digital artifacts and services, API connectivity, automated transformation workflows, Marketplace functions, and operational validation.
- Roadmap builds from early 2026 coordination and prize challenge activities toward IOC on 30 Aug 2027.

Crawl → Walk: Mature the platform, then scale the ecosystem.

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Decision Dominance Through Reusable Simulation

- Army Verse shifts M&S from isolated, event-driven development to a persistent enterprise service.
- The XM30 effort demonstrates a practical path from authoritative data to 3D models and executable behaviors.
- Marketplace, metadata, playbooks, and composition services convert one-time transformations into enduring Army assets.
- The <u>enterprise value</u> is <u>faster updates</u>, <u>reduced duplication</u>, <u>stronger traceability</u>, and more <u>consistent LVC representations</u>.

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PEO IEW&S			X	X	X	X
PEO M&S			X	X	X	X
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Army Verse End State: Shared M&S Ecosystem

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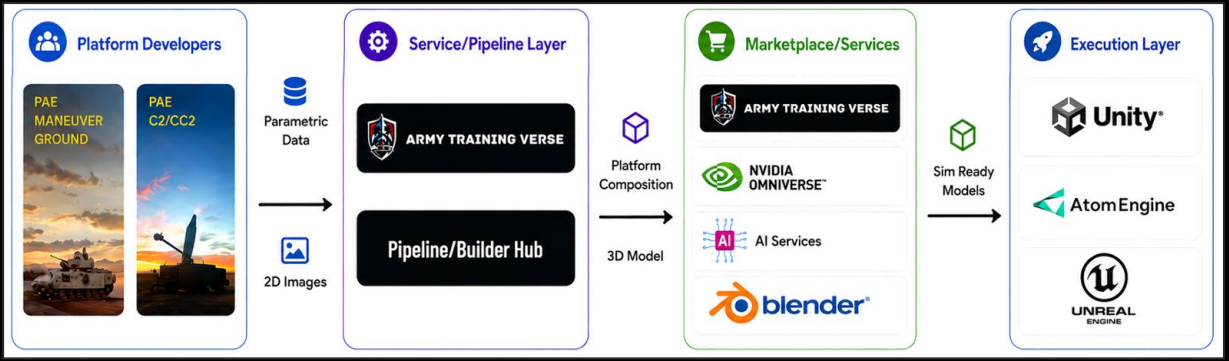

Repeatable process: Authoritative data becomes usable, scalable, mission-relevant simulation content.

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Acronyms

AAR: After Action Review

AI/ML: Artificial Intelligence/Machine Learning

API: Application Programming Interface

ASA(ALT): Assistant Secretary of the Army (Acquisition, Logistics, and Technology)

CAA: Center for Army Analysis

CAD: Computer-Aided Design

CPE ST3: Capability Program Executive Simulation, Training, Test & Threat

C-UAS: Counter Unmanned Aircraft System

DEVCOM: Development Command

DevSecOps: Development, Security, and Operations

FLRAA: Future Long-Range Assault Aircraft

IOC: Initial Operating Capability

LVC: Live Virtual Constructive

M&S: Modeling & Simulation

OpenUSD: Open Universal Scene Description

PAE: Portfolio Acquisition Executive

SysML: Systems Modeling Language

TSS/TMT: Training Simulation Software/Training Management Tool

UAS: Unmanned Aircraft System

VBS: Virtual Battlespace

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