ECMA Vision:
Delivering digital overmatch through data-driven outcomes at the speed of mission relevance

ECMA Mission:
The ECMA increases Army readiness and lethality by continuously enhancing digital literacy; driving data, software and process transformation; and delivering a secure, globally dominant cloud ecosystem, foundational to the Army modernization strategy and digital overmatch.
"The Army cannot maximize its modernization strategy without the cloud, which is the backbone for artificial intelligence."

- HON Ryan D. McCarthy
Former USA SECARMY
What is the cloud?

I often receive two very different answers:

"It's a way of providing compute and storage as a service."

(Sometimes takes the form of "It's somebody else's datacenter.")

"I have access to my data and services I need, when and where I need it."

Often provided by IT people

Often provided by mission operations
Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. This cloud model is composed of five essential characteristics, three service models, and four deployment models.

**Essential Characteristics:**
- On-demand self-service
- Broad network access
- Resource pooling
- Rapid elasticity
- Measured service

**Service Models:**
- Infrastructure as a Service
- Platform as a Service
- Software as a Service

**Deployment Models:**
- Private Cloud
- Community Cloud
- Public Cloud
- Hybrid Cloud
Strategic Objectives of the Cloud Plan

The Road to Building a More Lethal Force

Accelerate Data Driven Decisions
Decrease Time to Field
Modernize Security
Establish Cloud Principles
Adapt to Changing World
Provide IT Accountability
Army Cloud Modernization

**Army Commands, Application Owner, Acquisition PM**

- Coordinate with the ECMA for Modernization Support

**Buy**

- Cloud Service Providers
  - CAMO
  - Army Soldiers & Civilians
  - Contract Developers

**Application Development**

- Integrations
- Custom Code
- Data

**Deploy & Integrate**

- Enterprise Common Shared Services
- DevSecOps Ecosystem
- Data Management Platform Services

**Metrics & Analysis**

- Accurate resource consumption, consumption based (utility) billing and predictive cost data

**ECMA**

- Enterprise Contracts
  - UNCLASSIFIED

- cARMY
  - Common Services
  - CRéATE
  - Army Data Platform

- Coordinate with the ECMA for Modernization Support
Secure cloud building blocks

A way to buy

A place to go

A method to go

A new way of doing business
It’s a risk if the government doesn’t own the accounts we use to build cloud services.

Centralize the buying power of the Army.

Create financial and privileged management oversight and optimization from day one.

Optimized to provide universal low rates for cloud services to the entire Army (and DoD).
We need a secure landing zone - cArmy
DoD Secure Cloud Requirements

• cARMY, at its foundation, is a **cloud security driven service**

• DoD Cloud Security Requirements Guide
  • Requires organizations provide three components to the Secure Cloud Computing Architecture
    • VDSS – Virtual Datacenter Security Stack
    • VDMS – Virtual Datacenter Management Stack
    • TCCM – Trusted Cloud Credential Management

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cARMY provides these “as a Service” to all cloud tenants
cARMY is the Army’s general-purpose cloud environment and provides common shared services to establish a secure cloud environment.

### cARMY Services Availability

<table>
<thead>
<tr>
<th>CSP</th>
<th>IL2</th>
<th>IL4</th>
<th>IL5</th>
<th>IL6</th>
<th>CSSP</th>
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<td>✓</td>
<td>✓</td>
<td>* C5ISR</td>
</tr>
</tbody>
</table>

### AWS Cloud Availability
- IL-6 Central Available Now
- IL-2/4/5 W GovCloud Available Now
- IL-2/4/5 E GovCloud Available Now
- IL-2 VA Public Available Now

### Azure Cloud Availability
- IL-6 Available Now*
- IL-2/4/5 Govt TX Available Now**
- IL-2/4/5 Experiment Available Q3FY22
- IL-2/4/5 Govt VA Available Now
- IL-2/4/5 Experiment Available Q3FY22
ECMA Campaign Plan inheritance model applied in eMASS

Security Modernization Division is creating Army Enterprise Cloud Common Control Provider (AEC3P) in eMASS for mission application owners to inherit in order to **standardize** and **automate** security controls.
cARMY Customers and Services

Customers:
- Deputy Undersecretary of the Army
- Vice Director of Army Staff
- Arlington National Cemetery
- Army Communications-Electronics Command
- Army Futures Command
- Army Medical Command
- Army Training and Doctrine Command
- Headquarters, Department of the Army
- Program Executive Office Enterprise Information Systems
- Special Operations Command
- United States Military Academy
- XVIII Airborne Corps

Army’s Enterprise Cloud Environment Provides value for the Army by leveraging economies of scale with commercial Cloud service providers.

Establishes 31 Common Shared Services for application owners and developers to consume

Cloud Account Management Optimization (CAMO) enables the Army to create Cloud accounts and procure, monitor and manage Compute and Store consumption.
cARMY Global Cloud Architecture
How typical programs are built today

• …and what we see coming to our front door
• Tightly coupled programs, difficult to integrate with others and share data
• Difficult to distinguish data and services, and challenging to test and certify
• Separate deployment architectures by system with few commonalities
• Designed to fit in a box, oftentimes literally
How we should see programs today

- Programs are individual services and content purposefully designed, built and integrated
- Enables us to visualize duplicate services and content
- Enables us to transition to a horizontal service enabled architecture where needed
- Designed to scale for unpredictable world/needs
Eliminate duplication and deliver real-time authoritative data and enterprise services

Supported by API calls to Enterprise Common, Content and Mission Area Services

Services share scalable cloud infrastructure that exists only when needed

Cloud provides framework and resources to experiment and deliver value dynamically
Army DevSecOps Ecosystem

- **DevSecOps** - Converging the Development, Security and Operations cultures, processes and technologies in order to shorten the software development life cycle and accelerate the delivery of high-quality secure solutions into operations.
- **CReATE** is the Enterprise DevSecOps environment delivering tools for modern software development and Delivery.
- Standardize, streamline and automate continuous assessment and authorization of Army Software.
- Army Software Factory (ASWF) and Project Ridgway are product teams in this ecosystem delivering soldier driven capability.
Government owned, open standards architecture, cloud based DevSecOps ecosystem for the Total Army

Enabling Army curated, software based solutions designed, tested and continuously enhanced by AFC Software Factory

Codified, authorized and executed Army first Continuous RMF enabling continuous fielding to production
Cloud Modernization Approval Process
The Enterprise Cloud Management Agency (ECMA) serves as the authority for Army-wide cloud adoption and maintains the expertise to enable the Army’s cloud adoption efforts, reduce barriers to cloud adoption, and engage at every echelon to educate and inform customers on their journey to cloud. The ECMA developed the Army Cloud Modernization Approval Process (CMAP) Playbook to facilitate a standardized, transparent, and repeatable process to modernize and transition Army systems, applications and data to the cloud.

INTRODUCTION

The CMAP, depicted below, will facilitate a customer’s journey to cArmy - the Army’s general-purpose cloud environment that centrally provides common shared services and required Cybersecurity Service Provider (CSSP) services. cArmy is the directed hosting environment for all Army cloud activities aligned to the Infrastructure and Platform as a Service design patterns.

After a request is initiated, customers will follow a traditional modernization path or sandbox path based on their requirements. The traditional modernization path is for customers that have funding available, timeline dependencies, mature cloud architectures, or legacy systems and applications that need to move to cArmy and interact with the available common shared services. The sandbox path accelerates a customer's path to cloud by providing a cArmy sandbox environment to explore cloud native features and services to help design and develop new solutions. Regardless of the path, a customer can use this playbook as a how-to guide for getting to cArmy.

The ECMA will continue to streamline the CMAP based on lessons learned to reduce approval timelines and ensure greater adoption of commercial cloud across the Army. Feedback is encouraged and should be sent to armycloud@army.mil.
Cloud Modernization Approval Process
### WHY: Update Army policy on cloud adoption to deliver objectives of the Data and Cloud EXORD and provide clear process for the Army to follow and the resources to execute

- **WHO:** System Owner, Functional Owner, Mission Area Leads, CIO, CDO, ECMO, Command CIO/G-6, MADO

### WHAT: Execute Cloud Modernization Approval Process

- **WHERE:** Total Army

### WHEN: NOW

### HOW: Cloud Modernization Approval Process

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<table>
<thead>
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<th>Subject: Army Enterprise Cloud Services and Modernization</th>
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<td><strong>HOW:</strong> Cloud Modernization Approval Process</td>
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Many Army applications/systems lack support contracts with the people/skillsets to successfully execute a cloud migration and modernization plan.

Currently two (soon to be three) Army brokered options for access to cloud engineers/architects to deliver solutions.

- Information Technology Enterprise Solutions - 3 Services (ITES-3S), a $12.1 billion Multiple Award Indefinite Delivery/Indefinite Quantity (MA ID/IQ) contract vehicle
- Acquisition, Logistics and Technology Enterprise Systems and Services (ALTESS) Application Services Provider
- COMING Q4FY22: ECMA Enterprise Application Modernization and Migration (EAM2) cloud services contract
We exist to accelerate your journey to cloud

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A365: USARMY Cloud Services and Support (ECMA)
Me: Paul.b.puckett2.civ@army.mil