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Strategic Operations Enterprise

Overall Classification of this Briefing: Unclassified

Agenda:
- Strategic Directive/Guidance
- Mission/Vision/Tasks
- Army Digital Strategy Objectives
- GFIM OE
- GFM DI
- Questions
As the Army marches toward its goals of being a more ready, lethal, and modern force by 2028, it faces unprecedented challenges in modernizing its platforms and weapons systems, but also its business processes and workforce to dominate adversaries on and off the battlefield in multidomain operations (MDO). The Army must and will make bold investments in transformative digital technologies, build the workforce into one with the training and experience to execute the full range of Army missions in increasingly complex technological environments, and put the right data in decision makers' hands quicker than ever before.

Source: Army Digital Strategy
Christine E. Wormuth, Secretary of the Army

...investing in digital transformation and the modernization of the Army's underlying network and computer infrastructure is essential to our success. Specifically, the cloud is the foundation for this entire modernization effort. The Army will develop cloud computing technologies, improve data access and sharing environments, and streamline software development tools and services. Together, these technology investments will allow the Army to take advantage of emerging machine learning and AI technologies to understand, visualize, decide, and direct faster than our competitors. By leveraging cloud open architecture, information can flow rapidly between the enterprise and soldiers on the ground. This will enable commanders to counter adversaries in the information environment as effectively as they do in physical domains and win in the cognitive space.

Source: Army Modernization Strategy, 2019
Mission:
Perform governance and Portfolio Management of current Global Force Information Management (GFIM) Systems, conduct Business Process Re-engineering, and develop the GFIM Objective enterprise solution, integrating Force Management, Readiness and Resourcing in a GFM DI compliant enterprise level solution to provide a timely and accurate common operating picture of the Total Army, enabling risk informed senior leader decision making across the D2RR E2E.

Vision:
DAMO-SOE achieves Global Force Management Enterprise solution by capitalizing on immediate bridging strategies and development of long term solutions that integrate and automate Army Force Management, Readiness and Resourcing operational business processes, using an interoperable, collaborative environment which enables the seamless exchange of authoritative data across the Global Force Management community, and provides rapid, accurate, and auditable outcomes to support risk informed senior leader decisions.

Key Tasks:
- Establish policy and procedures for GFIM
- Provide capability management and portfolio analysis of GFIM Systems
- Conduct and Ensure Implementation of Business Process Re-engineering
- Develop and deliver an enterprise approach that is GFM DI compliant
- Develop and Deliver the G3 Data Lake
- Develop and Deliver the G3 Analytical Tool
- Serve as the Army lead for GFM DI compliancy
- Serve as the G3 Functional Data Manager
- Provide support to WMA and other mission partners
- Ensure data distribution to external sources (e.g. ADVANA, ORION, Congress)
OBJECTIVE 1: A digitally-enabled, data-driven Army propelled by digital transformation

The Army’s current digital initiatives are siloed across mission areas, inhibiting the interoperability needed to support MDO and Joint All Domain Command and Control (JADC2). The Army must prioritize resources for digital modernization over current year operational readiness. In addition, the Army should divest from unsustainable legacy systems while simultaneously investing in priority modernization efforts like cloud computing. Similarly, the Army should aim to balance resourcing IT service delivery and cybersecurity across the enterprise while also prioritizing modernization of the unified network. Between 2021 and 2028, the goal is to converge current digital initiatives that support readiness and modernization into a single integrated plan, enable these initiatives at the enterprise-level so they are available to the total Army from the tactical edge to the enterprise, and establish standardized service delivery processes, methods and tools, all fully leveraging cloud as an enabler. This effort will enable an Army that seamlessly shares data and information for timely insights to Warfighter, Commands, and enterprise functions, in direct support of Army readiness and modernization.
OBJECTIVE 2: Optimized and mission-aligned digital investments providing greater value to the Army

Operational excellence is an imperative for the Army in light of the tight fiscal reality in Program Objective Memorandum (POM) 2023-2027 and beyond. With the evolution of technology, commercial organizations are finding lower cost, more efficient, and innovative ways to run and invest in their enterprises. The Army seeks to maintain pace with the evolving advancement of technologies, but this requires a re-evaluation of priorities, resourcing, and investments. Current challenges include limited visibility into Army IT portfolios, inflexible and waterfall IT acquisition processes, and ineffective IT investment accountability and oversight. These challenges prevent the Army from ensuring its resources and spending are best aligned to save costs, improve operations, and ultimately harvest these savings to modernize the Army through digital transformation.

The goal is to optimize the Army’s resources and enable confident investment decisions that are data-driven and objective while at the same time ensuring direct alignment of these investments to Army priorities. With agile institutional processes for acquisition, PPBE, and portfolio management, the Army can ensure better alignment of digital resources to current and future digital requirements. The following LOEs will reform the enterprise and drive the ability to optimize investments.
OBJECTIVE 3: A tech savvy, operationally effective digital workforce partnered with a robust network of allies, industry, and academia

People drive success. The Army’s people and its relationships with allied partners are vital to achieving the goal to dominate in MDO. In today’s digital transformation revolution, simply having the newest technology is not sufficient – the Army needs the right digital skills to optimize, adapt, and fully apply the technology through innovation. Similarly, simply having strong partner relationships is not enough – the Army needs proper channels, networks, and systems in place to effectively collaborate and communicate. The Army workforce must understand, develop, apply, and enable digital priorities as well as external opportunities to improve collaboration with allies, academia, and industry.

The goal is to embrace the recognition that people drive Army’s success on and off the battlefield. Robust recruiting and selection, training programs, digital career models, and partnerships with academia and industry will build a digital ready, adaptive, and innovative workforce, with the full range of required digital skills. In addition, sustained communications and interoperability with allied nations will ensure the Army optimizes its ability to collaborate in all domains.
**GFIM Operational View (OV-1)**

**DEPLOY-TO-REDEPLOY / RETROGRADE (D2RR)**

**END-TO-END BUSINESS PROCESS**

- Perform Army Strategic Planning
- Determine Force Requirements
- Design the Force
- Align Forces
- Prepare Forces and infrastructure / Platform
- Conduct Mobilization
- Deploy Forces
- Employ Forces
- Support Deployed Forces
- Redeploy Forces
- Demobilize and Regenerate Forces

**GFIM PORTFOLIO (13 SYSTEMS PLUS RELATED SUBSYSTEMS)**

- SAMAS
- FMS
- FMSWeb
- RCAS
- AOS
- DRRS-A
- EMDS
- AST
- MOBCOP
- MARRS
- COMPASS
- WIAS
- ECOP

**CURRENT ENVIRONMENT (AS-IS)**

**OBJECTIVE ENVIRONMENT (TO-BE)**

- Workflow automation for D2RR processes
- Dynamic Force Structure for an Army at rest and in motion
- Enterprise approach for force structure/force management, readiness assessment, mobilization/deployment, and requirements validation
- Enablement of DoD Dynamic Force Employment (DFE)
- Compliance with and implementation of DoD GFM DI
- Sunset legacy systems in compliance with Army directives
- Implement Transformational Change across DOTMLPF-P

**Potential Bridging Solution**

- Workflow automation for D2RR processes
- Dynamic Force Structure for an Army at rest and in motion
- Enterprise approach for force structure/force management, readiness assessment, mobilization/deployment, and requirements validation
- Enablement of DoD Dynamic Force Employment (DFE)
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*EMDS will sunset and G-3 Analytical Tool will provide enduring analytical capability for GFIM COE. EMDS is outside the scope of the GFIM Prototype Project.*

Briefer: Ms. Mongold

DAMO-SOE/GFIM CMO: as of 30 October 2021

HQDA | DCS | G-3/5/7 UNCLASSIFIED
Components of GFIM OE

LOE 1: Deploy-to-Redeploy/Retrograde (D2RR)
Centrally manage D2RR E2E BP to automate workflows, streamline and re-design antiquated processes, and eliminate manual workarounds. Develop enterprise architecture products in coordination with functional community stakeholders and system owners for approval by GFIM Governance and Army Business Council. Lead D2RR Tri-Chair co-process champion responsibilities in coordination with FORSCOM and OBT. Manage and sustain portfolio of IT investments within Training and Readiness (T&R) Domain within the BMA.

LOE 2: GFIM Prototype Project
Leverage OTA agreement(s) to rapidly demonstrate DFS and DFE prototypes that will serve as a baseline for continued reconfiguration of an enduring materiel solution. Provide the Total Army with a transactional suite of automated capabilities for force management, readiness, mobilization/deployment, and requirements validation. Modernize and sustain the Army’s GFIT enterprise (GFIM Portfolio).

LOE 3: G-3 Data Lake (G3DL)
Establish a single data repository of raw authoritative data needed to execute D2RR processes for all IT systems within HQDA G-3/5/7 portfolio (e.g., ATIS, GFIM Prototype, etc.). Deliver a cloud-based solution in close coordination with Enterprise Cloud Management Office to enable the goals of the Army’s Data Plan to gain efficiencies, improve decision making and leverage emerging technologies.

LOE 4: G-3 Analytical Tool (G3AT)
The Enterprise Management Decision Support (EMDS) system will sunset and the G3AT will provide an enduring decision support analytical capability that enables the retrieval and integration of disparate data and processes across HQDA G-3/5/7 to create an automated common access point for G3 leadership.

LOE 5: Global Force Management Data Initiative (GFM DI)
Data standard for enterprise force structure authorization data to transmit across DoD enterprise. Implement GFM DI Increment 2 Next Steps Capability Development Documents for: (1) GFM Assignment; (2) Manpower and Personnel; (3) Readiness; and (4) GFM Allocation.

LOE 6: Change Management
Manage change associated with GFIM OE implementation across the total Army as a critical enabler of this transformational effort. Educate and inform stakeholders about the importance and value of GFIM OE to foster greater understanding and support for this capability need. Develop and execute change management plan that will guide leadership and staff strategic engagement, communication, and outreach related to GFIM OE implementation.
Global Force Management Data Initiative (GFM-DI) is the Department of Defense mandated data standard for force structure data to enable an enterprise approach to Global Force Management, D2RR, and DFE.

- DODI/DODM 8260.03 establishes DoD policy and directs all systems that document and consume force structure, manpower & personnel, equipment, readiness, allocation, assignment, and related information must be GFM DI complaint.
- Assigns responsibilities and prescribes procedures and data quality standards (metrics) for documenting and sharing force structure data, in a hierarchical format, across DoD.
- GFM DI force structure provides the means to integrate and aggregate data in an accurate, accessible, accountable, auditable, and transparent way.
- AR 5-1 and 10 April 2020 Secretary of the Army Memorandum directs GFM DI compliance.

GFM-DI enables the integration of force structure, personnel, equipment, readiness, real property, and location data. The aggregation of data provides an accurate, real-time view of the unit’s readiness, capability, and availability to support Dynamic Force Employment (DFE) and Multi-Domain Operations (MDO).

GFM-DI enables a common operating picture of the Total Army, at rest and in motion, across D2RR and all Title 10 functions to support DFE and MDO.
To enable DoD-wide interoperability, **all DoD IT systems that document force structure, manpower & personnel, allocation, assignment, and readiness related information** must represent and identify such structure in **accordance with the GFM DI format.**

**DEPSECDEF identified GFM-DI as a critical enabler** to fully implement Dynamic Time sensitive, risk informed DFE decisions requires an enterprise approach to provide timely and accurate **Capability, Readiness, Availability, and Employability (CRAE)** data.

All applicable systems in the WMA, BMA, and DIMA comply with the Global Force Management Data Initiative (GFM DI) force structure data.

All Army data sources must be developed with built-in data exchange capabilities. Data mapping must also be implemented to increase efficiency and ease of use of data assets as they are being translated or transformed. At a minimum, programs and initiatives are **required to comply with Global Force Management Data Initiative...**
Enterprise Force Structure

EFS provides digital hierarchy reflecting:
- Structure
- Leadership
- Command relationship

Down to Individual Soldier and crew/platform with a Unique Identifier

Aggregation Point * to integrate data
- Personnel
- Platforms
- Equipment
- Location and Real Property
- Movement Information

Integration (Linkage) of data enables:
- Real time capability, readiness, availability, employability of units.
- Collaborative Planning for force allocation decisions
- Collaborative Planning for resource decisions
- Cost Benefit Analysis
- Programming decisions
- **Total Army Enterprise approach to D2RR E2E**
- Support Dynamic Force Employment
- Support Multi-Domain Operations
Upon deployment, unit is \textit{OPCON} to JFC under a CCMD. This is a dynamic relation for a specific period of time. \textit{OPCON} implies \textit{TACON} unless otherwise specified.

Once Mobilized, unit is \textit{DIRCON} to 1st Army for post-mobilization training prior to deployment. They will also be \textit{DIRCON} for demobilization.

C2DEF “links” B Co to its Doctrinal/MTOE parent (3/172d) for Readiness, Trng Guidance, and Mobilization. This is permanent/enduring.

\textit{DIRCON} establishes C2 for Title 10/32 Operations, Exercises, Training, and habitual supporting elements. Can be enduring for habitual C2 or dynamic for specific period of time.

C2DEF Relations, and associated hierarchical trees, are de-conflicted by time and type of C2 authority (User selected) to ensure Unity of Command is not violated. IAW Joint Doctrine, COCOM/OPCON/TACON authorities exist only within the command structure of a CCMD.

\textit{OPCON} establishes C2 for Title 10/32 Operations, Exercises, Training, and habitual supporting elements. Can be enduring for habitual C2 or dynamic for specific period of time.

While \textit{OPCON} to the JFC, the JFC Cdr delegates \textit{TACON} to a subordinate Cdr for a specific operation. This is a dynamic relation for a specific period of time.
GFM DI provides a “bridge” between the Warfighting and Business Mission Areas…from the battlefield to CONUS based ERPs

CCDRs / Warfighters

Multi-Domain Operations

D2RR / HQDA / ACOMs

Medical Deployability & Predicted Resiliency

Personnel Status, Location and Replacements

IPPS-A

Equipment Status, Location, Repair, Replacement, CBM+

AESIP

Support DFE and JPES

GCSS-A

Facilities and other Real Property

ORION

ASIP

Real-time & Predicted Training Status from Unit to Crew and Soldier

Real-time & Predicted Readiness

ATMS

Funding and Costs

GFEBS

DRRS-S

Linking the UII of the THAAD Launcher to the GFMID of the unit/crew, as part of a tactical data standard, will enable data exchange across the Army and Joint Networks. The GFMID provides a “bridge” between WMA and BMA, between the tactical battlefield and the CONUS Strategic Support Area ERP to support/sustain Multi-Domain Operations.
Data Lake
Within the GFIM OE

GFIM OE (conceptual)

G3 Data Lake

NIPR Data Lake

SIPR Data Lake
The G3 Cloud Data Lake is Built to Perform at Scale

Avoids fragile / brittle data interfaces
- We decouple the architecture from consumers by moving consumers to use APIs. The implementation can change but the API remains the same.
- APIs can also be versioned to gradually phase in changes (instead of abruptly coordinating a change in a RDBMS solution for example.)

Avoids a system that is likely to collapse under its own weight
- We build automation and DevOps processes into the system at the beginning to ensure we have a sustainable system that will not grow in complexity more than it needs to.

Engineered for Cost & Performance
- Right-size the cloud hardware: AWS EC2 instance types, storage volume types, RDS database instance types, S3 storage class.
- Utilize Kubernetes/containerization solutions to optimize software resources.
- Performance scaling via auto-scaling groups and elastic load-balancers where dynamic/changing loads are expected.
- This ensures that the Data Lake provides the highest level of service without keeping unnecessary servers online.

High-Availability/Disaster-Recovery (HA/DA)
- High-availability requirements are satisfied with a combination of elastic load-balancers, multi-zone solutions.

Avoids a native lift/shift mindset
- Our goal is not merely to “get to the cloud” – our goal is to leverage the unique properties of the cloud (elasticity, scale, and reliability) to build a robust system.
G3 Data Lake: Architecture Governing Principles

- **Centralized**
  - One source of authoritative data.
  - Eliminates consumers (both internal and external) directly connecting to different systems and getting different answers.

- **Decoupled**
  - Leverages external APIs to decouple from data providers and consumers.
  - Enables making internal changes without breaking external consumers.
  - Enables making changes at the speed of mission without needing to coordinate with external consumers.
  - Protects internal data and enables centralized access and control.
  - Promotes cross-platform integration between different software languages, paradigms, and technologies.
  - Mitigates application or infrastructure downtime that are present in many monolithic architectures, costing organizations hundreds of thousands of dollars a year.

- **Automation**
  - We do not build things by hand.
  - Architecture is repeatable, reproducible, and self documenting.
  - Templating is used to enable deployment to multiple environments while providing a common baseline.

- **Elasticity**
  - We embrace the cloud principle of elasticity.
  - Servers are built fully by automation (within limits imposed by security process) and are designed to be deployed and scaled in an elastic fashion.

- **Cloud Native not “Lift and Shift”**
  - Incorporates cloud best practices (based on many years of hands on experience, not a checklist from Gartner) up front from the start.
  - Planned for the future, not just the immediate needs of the next few months.

- **Use Cloud Native Services**
  - We leverage cloud native services whenever possible.
  - Enables us to leverage CSP’s guarantees on scalability and reliability.
  - Reduces engineering effort.
  - Reduces cost. For example:
    - Infrastructure hosting.
    - Maintenance and manual ops.
  - Constrained by security requirements but also reduces security overhead. For example:
    - Using RDS versus standing up a Database server.
    - Using Lambda versus building a service layer.
  - Balancing cloud vendor lock in versus cloud efficiency.
    - Minimizing vendor lock via tooling and architecture.
Questions??