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OFFICE OF THE SECRETARY OF DEFENSE
COST ASSESSMENT AND PROGRAM EVALUATION

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SLIDES ONLY

Department of Defense
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NO SCRIPT PROVIDED

Enterprise Visibility and Management of Operating and Support Cost (EVAMOSC)

ICEAA 2025

14 May 2025

Kimberly Roye, Data Scientist/Cost SME, EVAMOSC, Tecolote Research, Inc.
Shanice Kaduru, EVAMOSC Deputy Program Manager, Tecolote Research, Inc.

Agenda

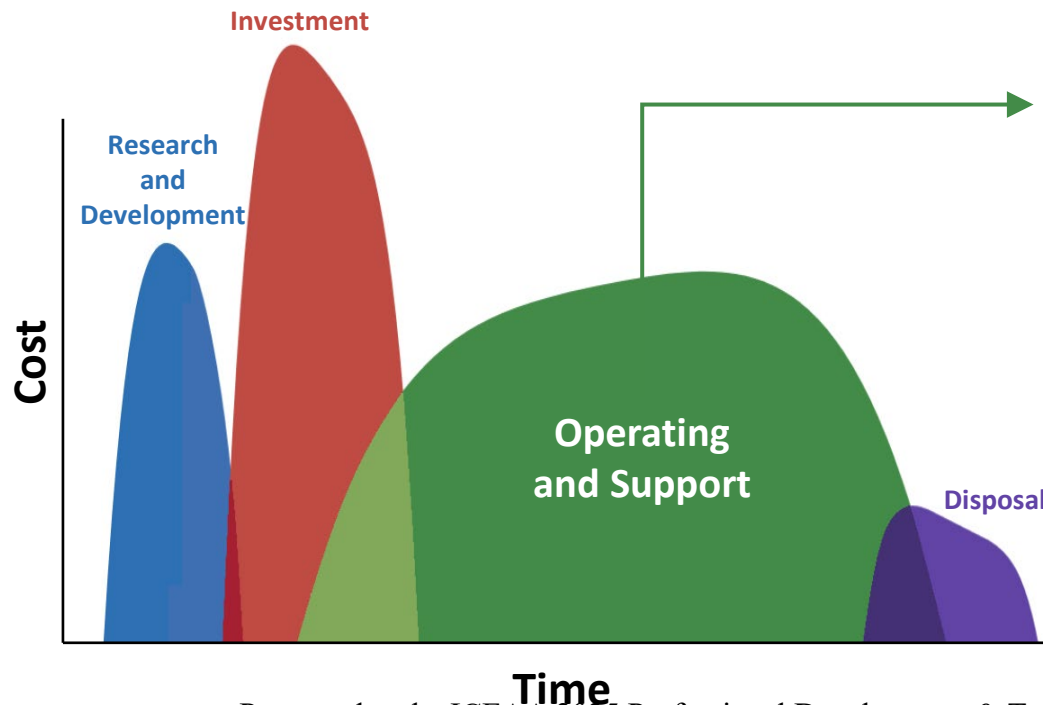
- **EVAMOSC 101: A Foundational Overview**
- **What's New: Recent Data Additions**
- **Insights Uncovered: Highlights from Recent Analyses**
- **Accessing EVAMOSC**

EVAMOSC 101

What are Operating & Support (O&S) Costs?

- Operating and Support (O&S) consists of all effort related to sustainment after initial system deployment through the end of system operations
- For most weapon system commodities, the O&S phase is the longest & most costly phase
- O&S costs are categorized utilizing OSD CAPE's O&S Cost Estimating Guide's Cost Element Structure

Weapon System Cost Over Time, by Phase




2025 O&S Cost Estimating Guide's Cost Element Structure (CES)


CES Number & Title	CES Description
1.0 UNIT-LEVEL MANPOWER	Operators, maintainers, and other support manpower assigned to operating units. Includes military, government civilian, and/or contractor manpower
2.0 UNIT OPERATIONS	Unit operating material (e.g., direct fuel and training material) and unit support services. Excludes all maintenance and repair material
3.0 MAINTENANCE	System maintenance other than maintenance manpower assigned to operating units. Consists of organic and contractor maintenance
4.0 SUSTAINING SUPPORT	System support activities other than maintenance that can be attributed to a system and are provided by organizations other than the system's operating units
5.0 CONTINUING SYSTEM IMPROVEMENTS	Hardware modifications and software maintenance to keep the system operating and operationally current.


What is Enterprise Visibility and Management of Operating and Support Cost (EVAMOSOC)


OSD CAPE-developed database of actual operating and support (O&S) data for major weapon systems


- Statutorily required by 10 U.S. Code §4325
- Scalable cloud based (i.e., AWS) infrastructure containing data from dozens of DoD data systems
- Focus on transparency and thorough documentation
- Accessible via CAC by DoD analysts and covered government support contracts
- Wide variety of O&S data:


 Financial e.g., obs/exp by contract/project/MX event

 Logistics e.g., parts inventory, transportation


 System Utilization e.g., flight hours, fuel consumption

 Operational Availability e.g., Mean Down Time, Repair Cycle Time, Customer Wait Time

 Maintenance e.g., parts consumption, touch labor hours

 Personnel e.g., cost and headcount by unit, rank, job code

 Systems Inventories e.g., fielded quantities by unit

 Demonstrated Reliability e.g., parts replacement ÷ utilization

- Modern, flexible user interface with multiple levels of detail/export options:
 - Human or AI ready tables with population-level totals and serial number-level details

EVAMOSOC is built by analysts, for analysts

How Big Is EVAMOS?

As of April 2025, Version 12.0.0

Metric	Value
Transitional Value of Normalized Data	\$207.9B
Data Stored	14.3TB
Distinct Weapon Systems Covered	~3,150 systems
Weapon System Inventory Tracked	~2.8M systems
Observed Unique Replacement Parts	~501K parts
Distinct UICs Tracked	~132K
Source Data Systems Ingested	26 systems
User Accounts	~600 users
Data Timeframe	Varies, FY15+ targeted
User Accessible Tables of Data	81
User Accessible Dashboards	40
Database Releases Since Launch	37

How EVAMOSC Works

Data Needs & Governance



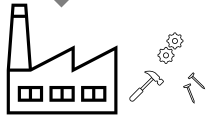
Identifying which data is available and required by source data system, communicating with system owners, and establishing data usages agreements.

Raw Data Pipeline



Establishing efficient transfers of data from source data systems into EVAMOSC, preserving data integrity.

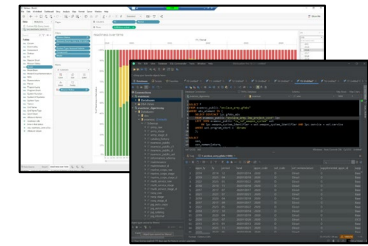
Data Factory
Reshape & Enrich Data



Subject Matter Expert & Data Engineers reshape, enrich, and normalize, data while ensuring traceability back to its original source.



S3->S3
DoD SAFE
Mailing Hard Drives

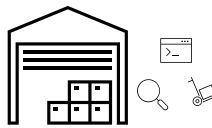


Documentation

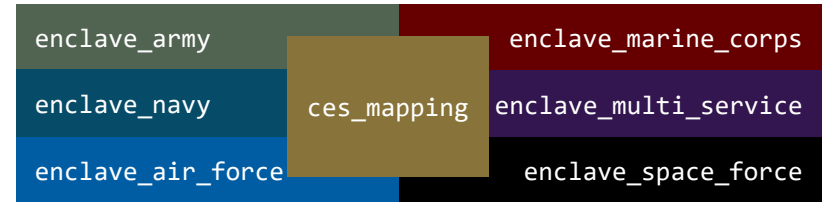
Behind the Scenes

Accessible to Users

Self-Service Analytics
Data Warehouse



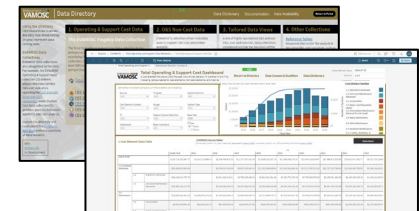
Publishing detailed data tables for use by EVAMOSC users and for continued use by EVAMOSC developers.



Dashboards
Tailor Made by Topic or CES



Data warehouse tables are used to create dashboards which focus on specific topics, cost elements, or aim to answer specific questions.



EVAMOSC Website: <https://evamosc.osd.mil/>

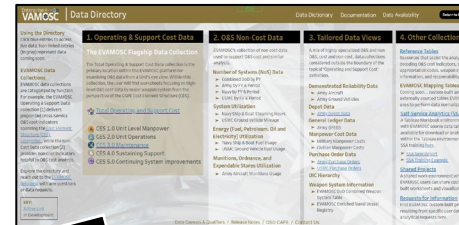
Public Site

- EVAMOSC Statutory Requirements
- Training Calendar
- Recent News



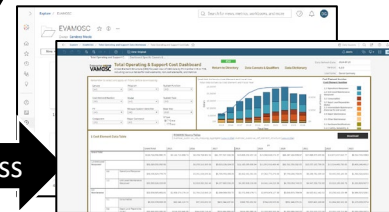
Data Directory (Tableau)

- Structured list of data currently available and in process
- Improves user interface & visibility of data available



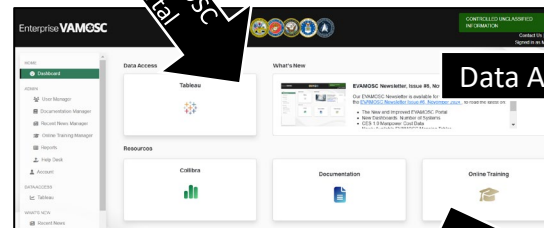
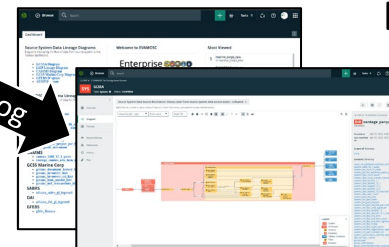
Data Access (Tableau)

- Prebuilt Workbooks with Normalized Data
- Data Export Capability
- Self-service Analytics using Tableau Templates



Data Catalog (Collibra)

- Data Lineage Diagrams for Each Source Data Systems
- Data Dictionary/Definitions
- Transformation Documentation



EVAMOSC Portal

Directory

Data Access

Data Catalog

EVAMOSC Portal

- Firewalled Access
- Training Videos
- Documentation
- Data Access (Tableau)
- Data Catalog (Collibra)

Accessible to DoD Common Access Card (CAC) holders

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EVAMOS Data Used Across the DoD

Sustainment Reviews and O&S Cost Estimates

- EVAMOS data has been used in dozens of Army and USMC sustainment reviews and other O&S cost estimates

Sustainment IAPR/DMAG and Metrics Dashboard

- Providing O&S Cost data Sustainment data on Advana

Improving Data Standardization

- Weapon System Table: Service-agnostic classification system that enables efficient assessment of weapon system costs across and between military Services at various levels of summarization
- UIC Hierarchy: Combines multiple personnel and maintenance UIC hierarchy source tables from across the DoD into a unified format; critical to standardize O&S cost and non-cost data

Validating Programming and Budgeting Estimates

- Detailed execution data across multiple areas (maintenance, manpower, operational) within a weapon system life cycle

Identifying Systemic Issues in Source Data Systems

- EVAMOS data can help evaluate the accuracy, transparency, and reliability of source data systems (e.g., many financial data systems lack detailed records to attribute costs to weapon systems)

Improving Readiness

- EVAMOS data confirmed Army hypothesis regarding high rate of part turnover, identifying potential \$5.5B savings
- Annual parts usage and cost drivers of the Bradley for a climate impact analysis
- Supported Ukraine efforts providing Abrams' in-use and storage quantities

EVAMOS data can be utilized to facilitate a variety of use-cases, estimations, and analyses

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Analysis using EVAMOS



Manpower

General manpower - How many people, at which locations, and doing what?

Skill mix - Distribution of rank and cost for comparison against MILPAY rates



Location

Distribution of maintenance events, quantities, etc. by location

DODAAC data is being applied to EVAMOS data tables; ECD end of 2025, DODAAC will be released monthly as it becomes available



Maintenance Cost Logs & Records

Key maintenance cost indicators such as frequency of maintenance events by status, trends in repair time and replacement part usage for Army Aircraft



Work Order Duration

Average work order duration for a given replacement part, location, etc.



Maintenance Event/Overhaul Frequency

How often are systems undergoing an overhaul?



Number of systems over time

Distribution between active and reserve
Distribution by major command, brigade, company, etc.

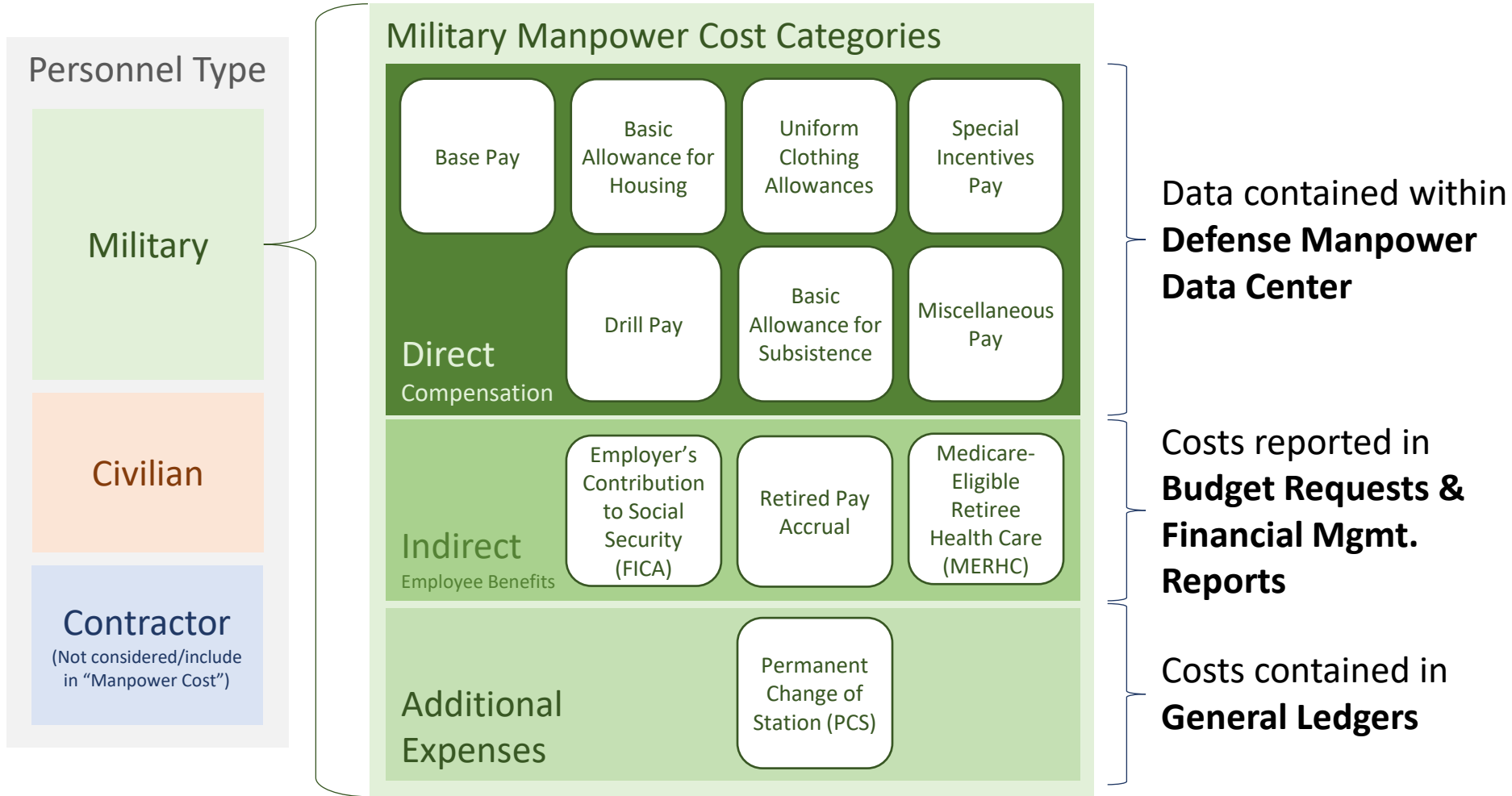
EVAMOSC Roadmap

As of Version 12.0.0, April 2025

Recently Published	In Work	Next
<ul style="list-style-type: none"> • Navy Vessel Organizational-Level Maintenance (CES 3.1 – 3.2) via <i>Ships' 3-M</i> • Army, Navy, and Marine Corps Other Unit-Level Military Manpower (CES 1.3) Costs via <i>DMDC & Budget Exhibit Actuals</i> • Tables & Dashboards of Army General Ledger Systems via <i>GFEBs</i> • Army, Navy, and Marine Corps Cost Analysis Requirements Document (CARD) Dashboard via <i>multiple source data systems</i> (CES 1.0 & 3.0) 	<ul style="list-style-type: none"> • Navy and Marine Corps Aircraft Maintenance (CES 3.1 – 3.2) via <i>DECKPLATE</i> • Army, Navy, and Marine Corps Weapon System data Tagged by Geographic Location (i.e., DoDAAC) via <i>DoDAAD</i> • Army, Navy, and Marine Corps Data Aggregated by Standardized Force Structure (i.e., UIC Hierarchy) via <i>multiple source data systems</i> • Army, Navy, and Marine Corps Civilian Manpower Costs (Applicable to many CES) via <i>DMDC</i> • Navy & Marine Corps System Utilization Data via <i>DECKPLATE</i> 	<ul style="list-style-type: none"> • Marine Corps Depot Maintenance (CES 3.4) via <i>multiple source data systems</i> • Tables & Dashboards of DoD General Ledger Systems (e.g., Navy NERP, Marine Corps STARS/SABERS) • Marine Corps Intermediate Maintenance (CES 3.3) via <i>GCSS-MC and TFSMS</i> • Revised dataflows and business logic related to CAPE 2025 Cost Element Structure updates (e.g., additional costs mapped to CES 5.1 Hardware Modifications) via <i>multiple source data systems</i>

Recent Data Additions

Military Manpower Cost Categories and Data Sources



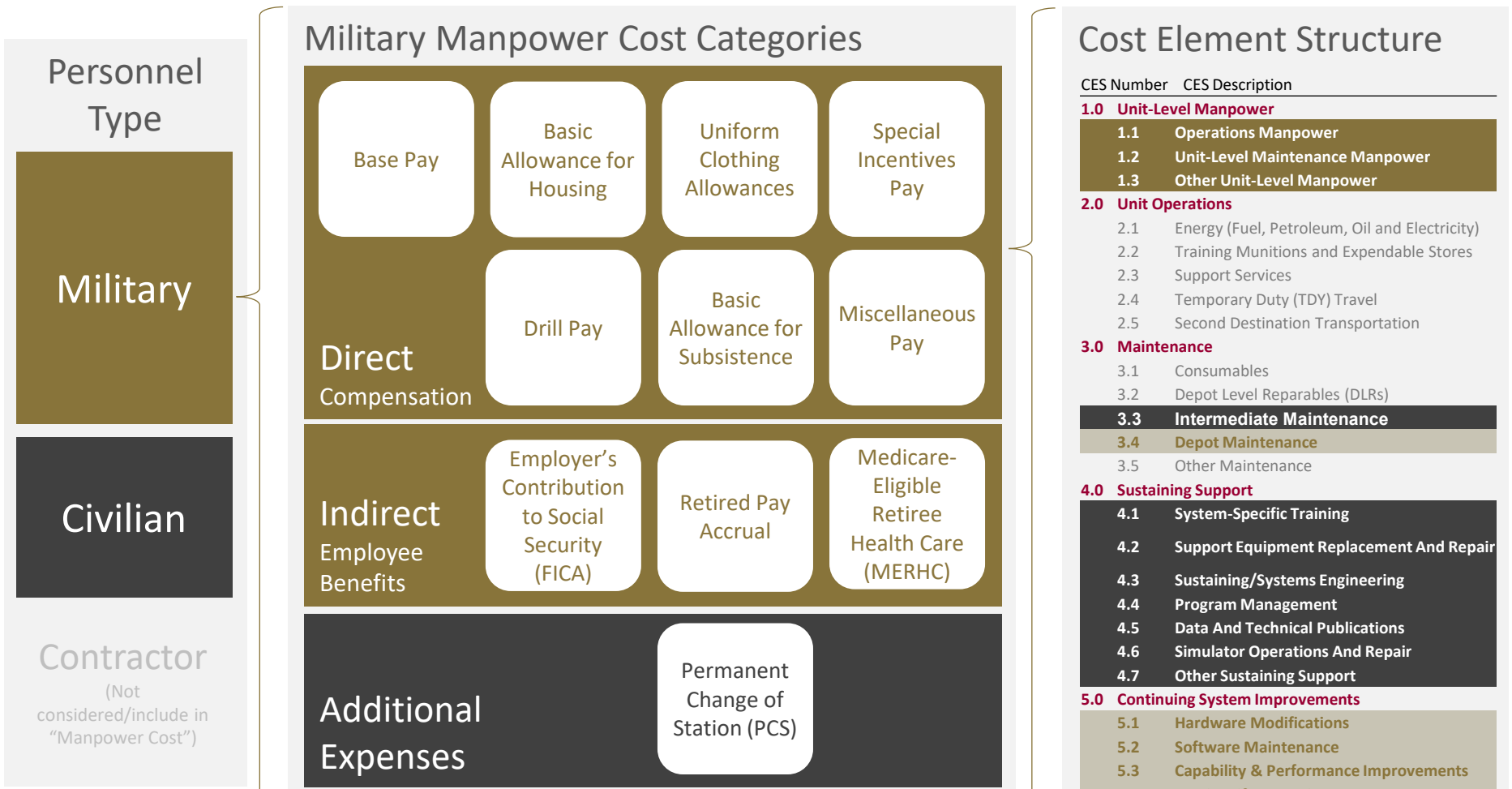
EVAMOSC Manpower Data Availability Status

As of April 2025 / Version 8.0.0



OSD CAPE

Status

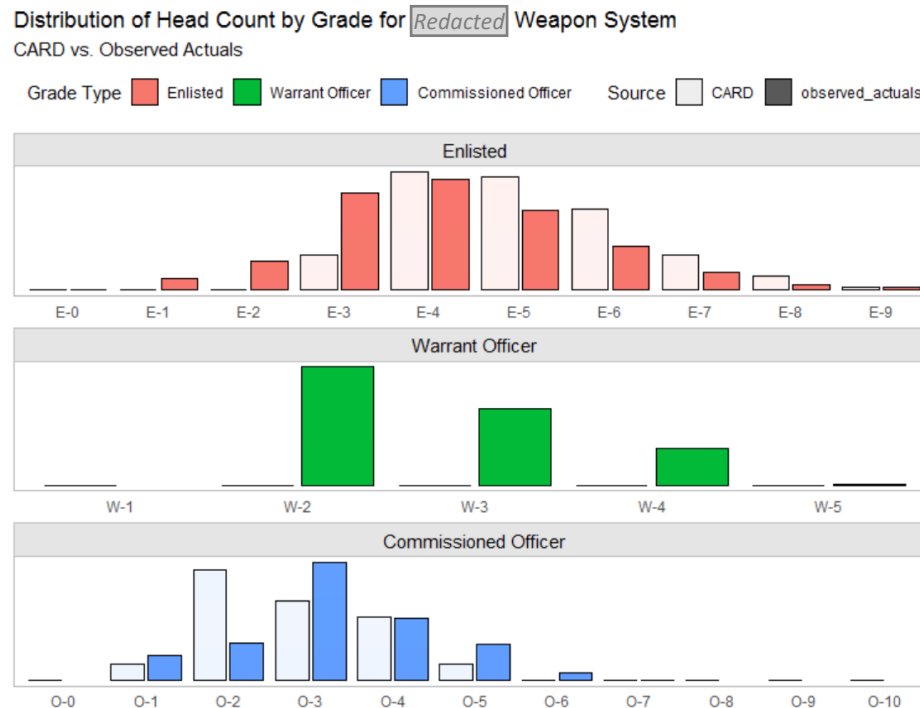


Required vs. Observed Manpower

Cost Assessment Requirements Documents (CARDs) typical identify Unit-Level Manpower Requirements by grade and headcount.

EVAMOSC's actual manpower cost and headcount data can be used to compare CARD reported requirements to historical actuals observed.

- Examples from a recent Sustainment Review:




Checking requirements against historical actuals improves estimates.

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CARD Tables Workbook

Cost Assessment Requirements Documents (CARs) templates designed to support development of CARD Tables. Actual cost data for manpower and parts cost/quantities for historical data point



CARD Tables Workbook

Navigation Page

Data Refresh Date: 2025-04-24

Version: 12.0.0

Username:

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Workbook Quick Links

[EVAMOS Portal](#)

[System-Wide Caveats & Qualifiers](#)

EVAMOS RESOURCES

[EVAMOS Data Dictionary Documentation](#)

[Online Training](#)

EXTERNAL RESOURCES

[OSD CAPE CARD Guidance](#)

About EVAMOS's CARD Tables Workbook

The Cost Analysis Requirements Description (CARD) Tables workbook is designed to assist cost estimators in their CARD formulation process by providing key O&S metrics directly relevant to the operation and sustainment of a weapon system program. At present, the EVAMOS CARD Table workbook offers CES 1.0 Unit-Level Manpower, CES 3.1 Consumable Parts, and CES 3.2 Depot-Level Repairable (DLR) Parts data, with more to come in future releases.

Dashboards in this Workbook

Manpower Time Phased	This dashboard contains EVAMOS CES 1.0 Unit-Level Manpower data relevant to a selected weapon system.
Parts	This dashboard contains EVAMOS CES 3.1 Consumable parts data relevant to a selected weapon system.
LRU	This dashboard contains EVAMOS CES 3.2 Depot-Level Repairable (DLR) parts data relevant to a selected weapon system.
Coming Soon... Quantities and O&S Time Phased	Coming soon... contains non-cost data by FY for a weapon system program
Coming Soon... O&S	Coming soon... calculated fuel consumption rates, training munitions/expendable stores, maintenance related actions, parts issued, cost per action and depot events for a weapon system program

Workbook-Level Filters

Note: Individual dashboards will show relevant data available for the selected filters.

Service: Program:

Weapon System Identifier & Nomenclature:

Workbook Caveats & Qualifiers

CLS Data	EVAMOS has limited Contractor Logistics Support (CLS) data.
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[Data Dictionary](#) / [Documentation](#) / [Online Training](#) / [Contact Us](#) / [Return to Portal](#)

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Highlights from Recent Analyses

Inflation and Escalation Dashboard Introduction

Dynamic escalation dashboard is being developed for analysts to build custom rates and analyze specific baskets of goods.



Greater Precision

Captures unique inflationary pressures on specific cost components



Tailored Risk Analysis

Develop uncertainty parameters for escalation factors



Improved Credibility

Strengthens analysis with traceable and defensible granular calculations



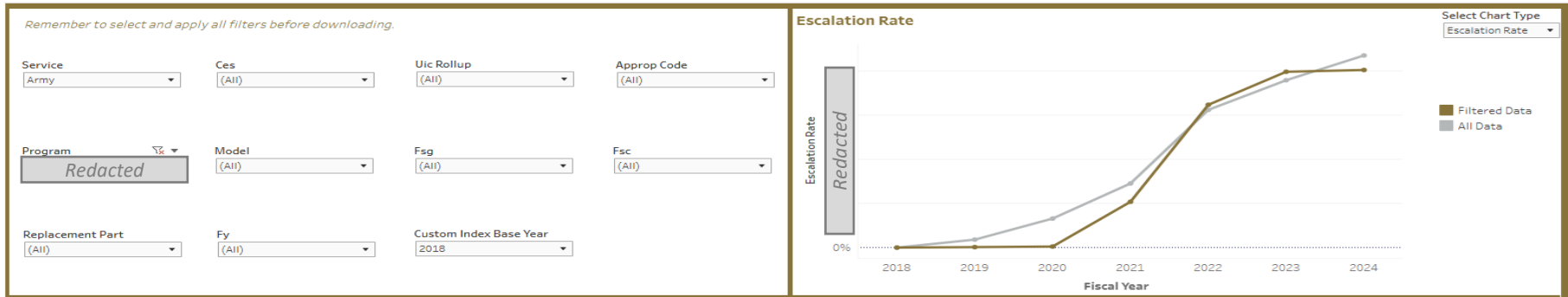
Better Program Management

Enables more accurate budgeting and minimizes risk of cost overruns

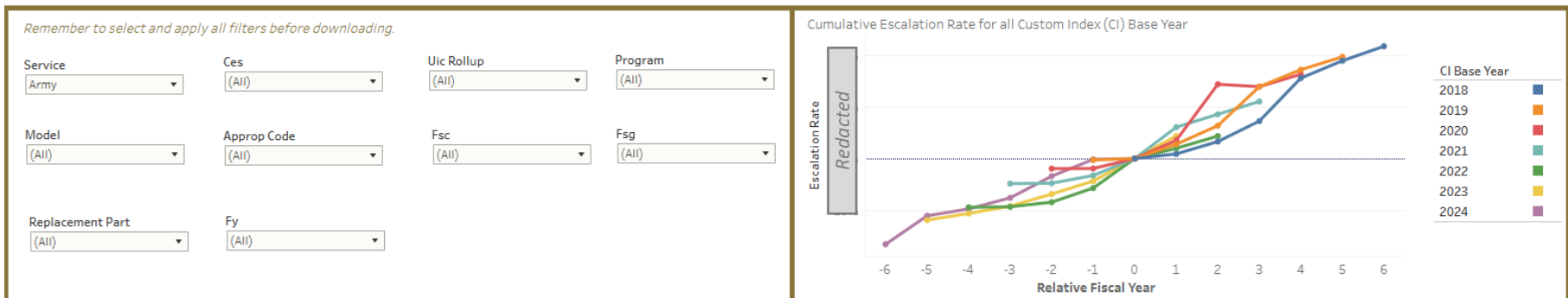
Escalation Dashboard

*UI in Development

Notional Data

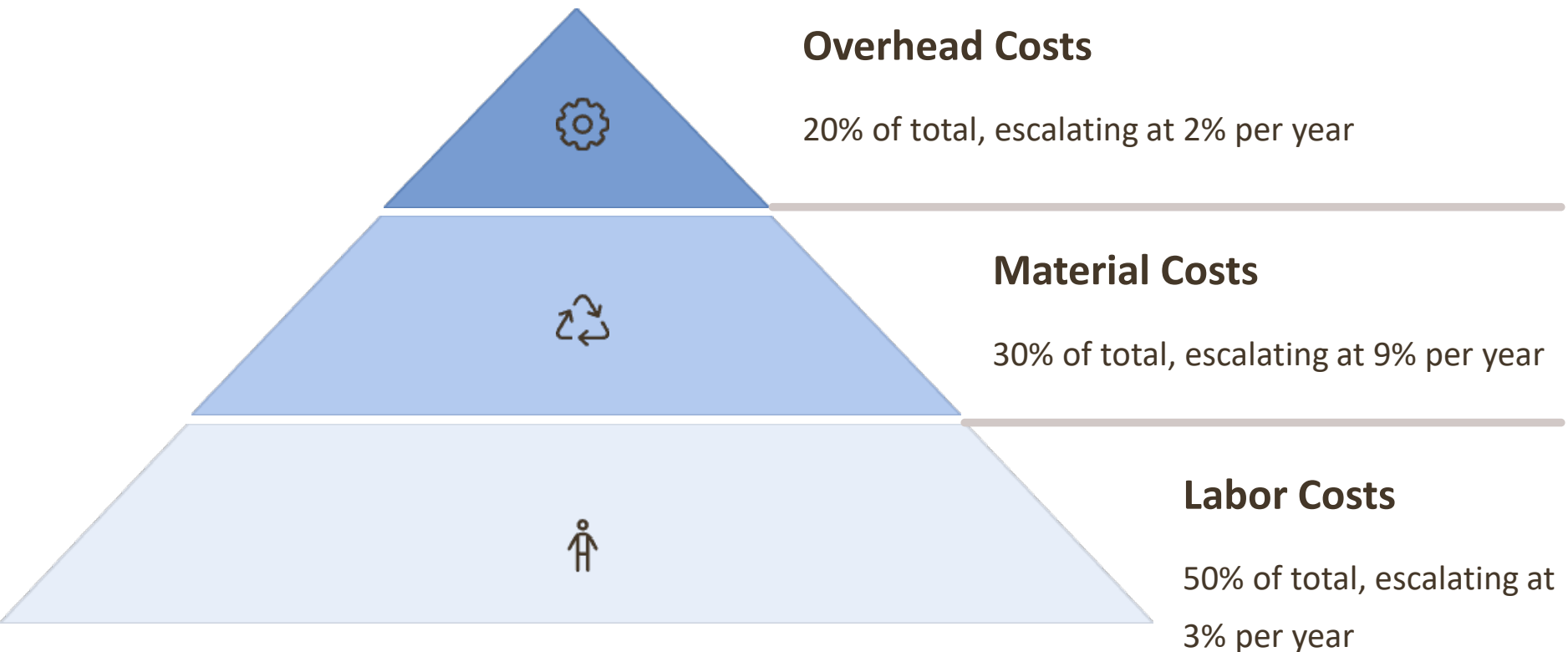


The Inflation/Escalation dashboard will provide users the opportunity to calculate Consumer Price Index (CPI) inflation and tailored escalation rates based on selections made using the built-in filters. Functionality is being developed to compare actual derived CPI for filtered data to all available data and to explore escalation uncertainty depending on the chosen Base Year (BY).



Category-Level Escalation: A Practical Example

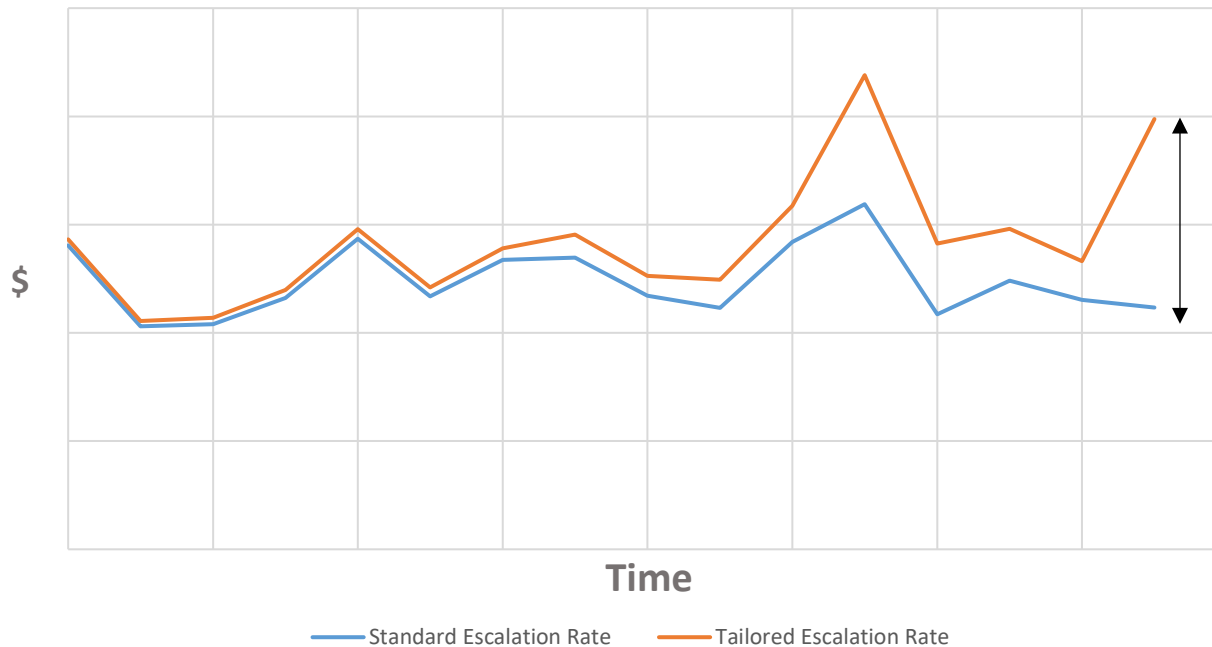
Applying category-level escalation provides a more accurate picture of cost growth compared to using a single overall factor. Consider a project with varying escalation rates across different cost categories:



A Practical Example – Part 2

Using the customized escalation dashboard provides critical insights for accurate planning. By understanding and incorporating escalation, it adds credibility to cost estimates and reduces the risk of funding shortfalls.

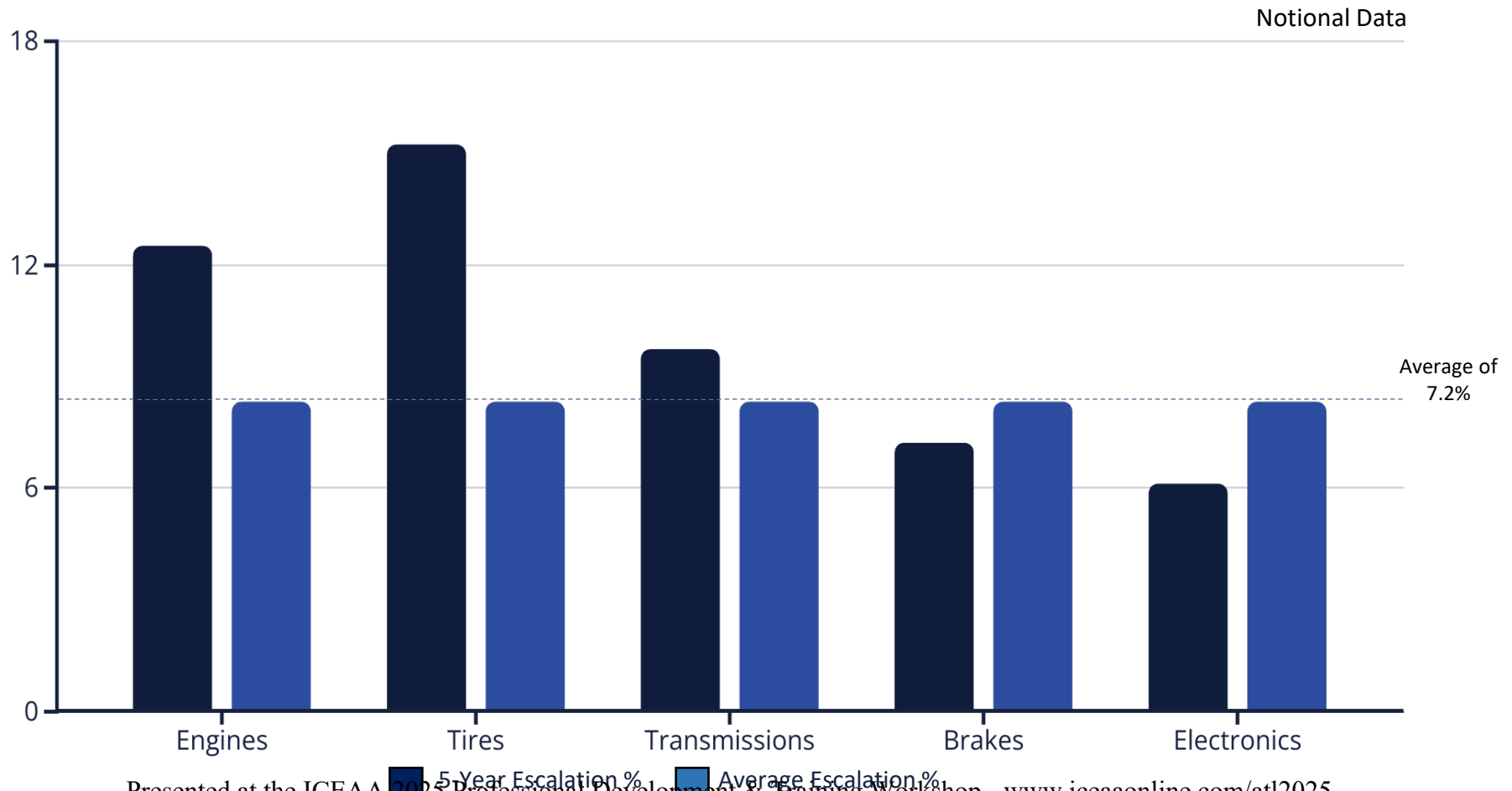
Impact of Escalation on Cost Estimates



Estimating
Error Due to
Standard vs.
Tailored
Escalation
Rate

Cost Driver Analysis

Traditional sustainment reviews highlight top 10 most expensive consumable & reparable. For vehicles, engines and tires consistently dominate these lists. The real insight is not just identifying high-cost items. It is understanding escalation patterns across these critical components.



Federal Supply Class (FSC) and Federal Supply Group (FSG) Factors

Federal Supply Class (FSC)

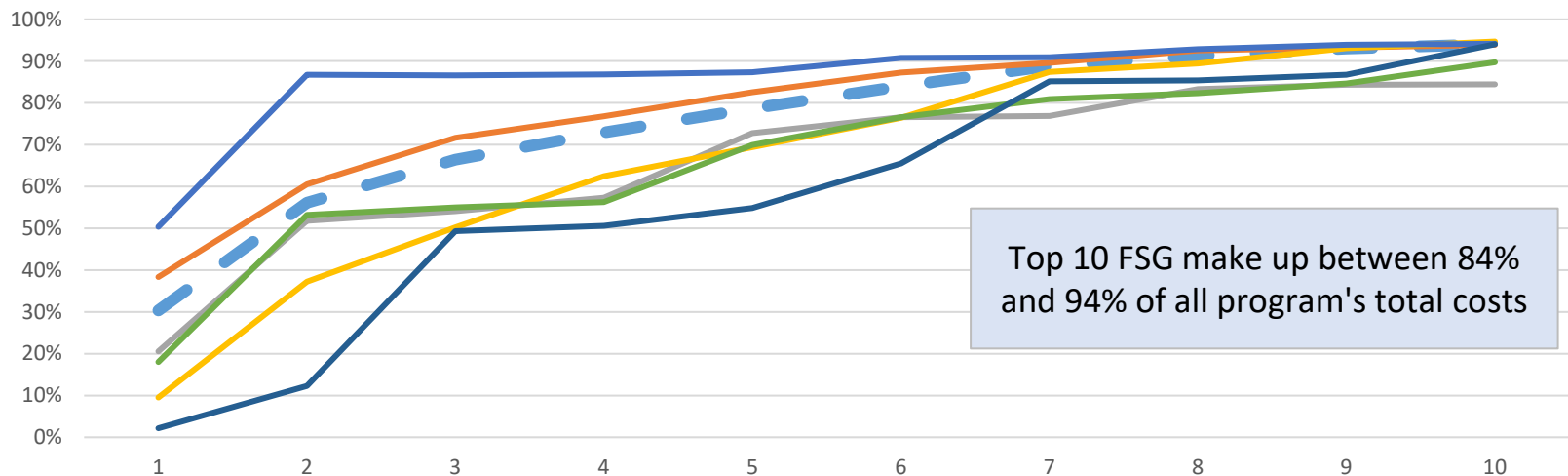
Four-digit code identifying specific categories of supplies or equipment

Federal Supply Group (FSG)

The first two digits of the FSC, grouping smaller items

Using EVAMOSC data, analysis is being done on FSC/FSG data to understand the impact that specific categories of supplies of equipment have on overall O&S costs.

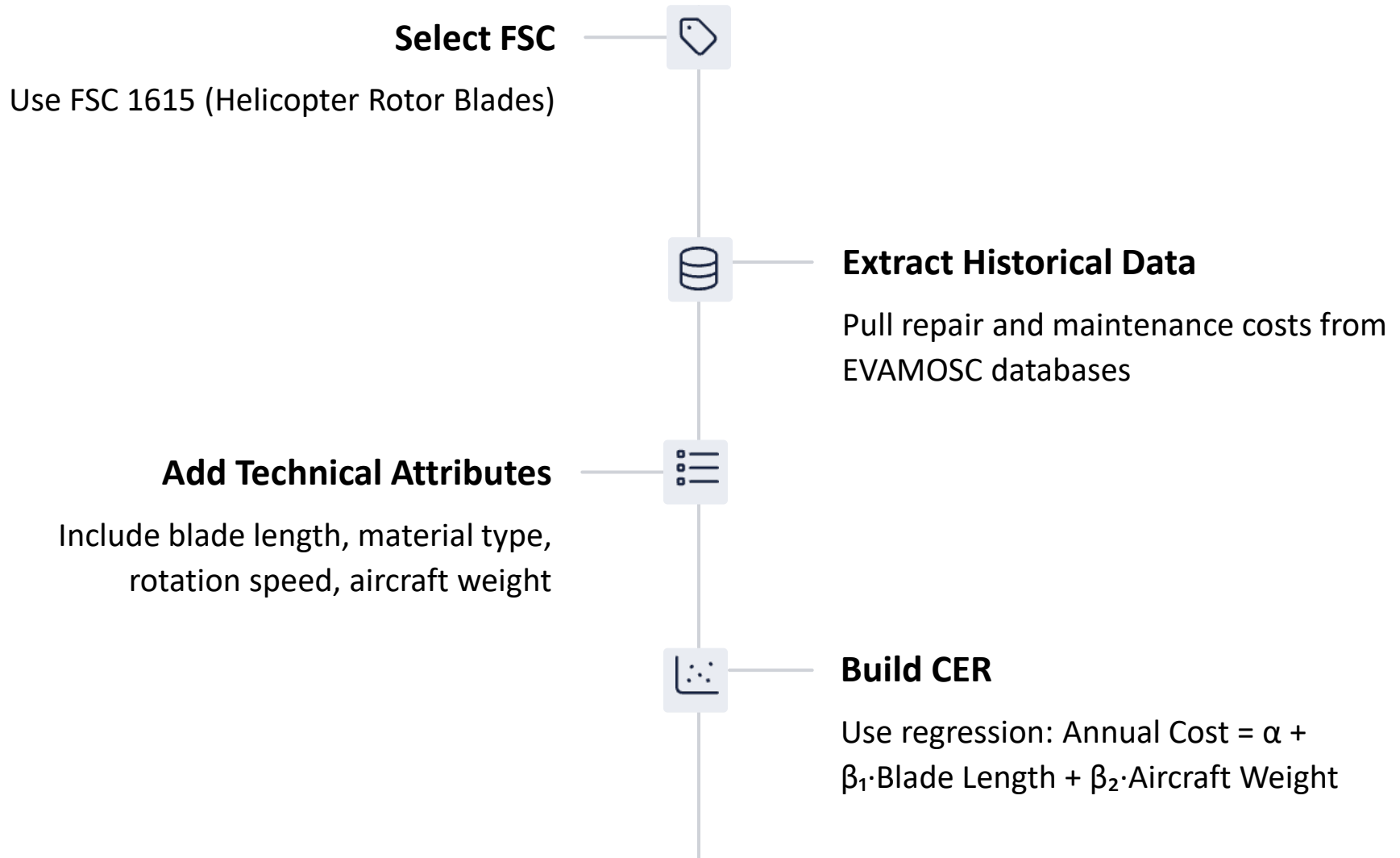
Cumulative % of Program by Top Ten FSG



Top 10 FSG make up between 84% and 94% of all program's total costs

Each color line represents a different program and is a sample of the types of analysis that can be done with the EVAMOSC FSG data to build cost factors. The dotted line represents the cumulative percent of the grand total.

Incorporating FSC Data into Cost Analysis



FSC/FSG Data Uses in O&S Analysis

Identify High-Cost Parts

Determine which classes of parts are driving sustainment costs across systems.

Compare Performance

Evaluate cost performance across different weapon systems and platforms.

Spot Problem Areas

Find parts with high failure rates or expensive supply chains.

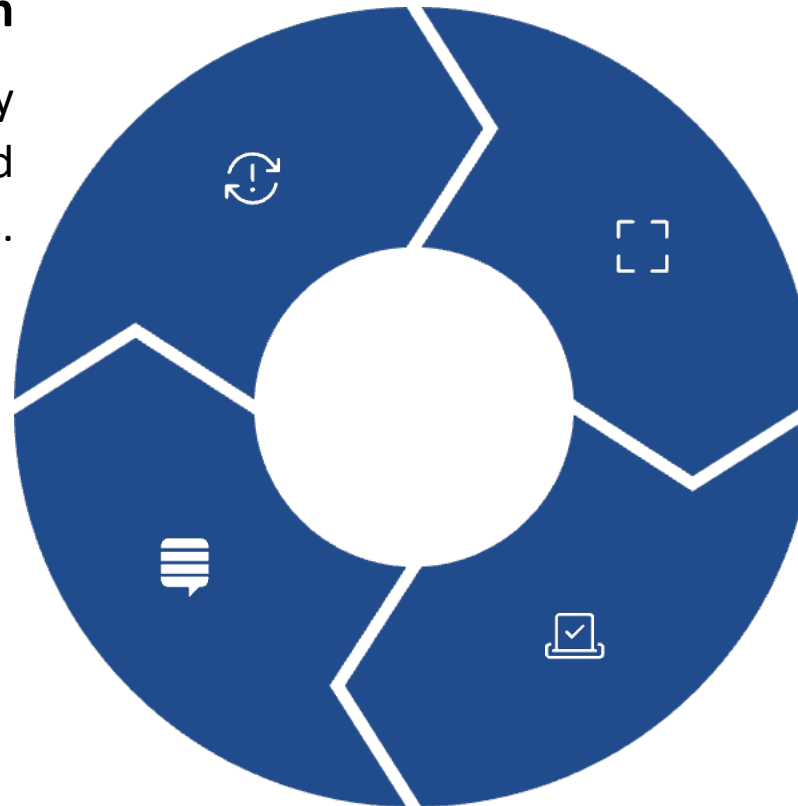
Budget Planning

Create accurate forecasts for future sustainment budgets.

Benefits of Using FSC/FSG in Cost Estimation

Data Standardization

Ensures consistency across services and weapon systems.



Scalability

Allows modeling at part, subsystem, or higher levels.

Cross-Platform Learning

Transfers cost insights across systems using the same parts class.

Traceability

Makes estimates easier to justify and audit.

How to Reach Us & Stay Informed



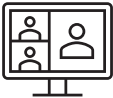
EVAMOSC Helpdesk osd.mc-alex.cape.mbx.evamosc-helpdesk@mail.mil

- The EVAMOSC Helpdesk is happy to answer all your questions on O&S, EVAMOSC, and the data within EVAMOSC!
- We strongly recommend that you let us know about the estimate/analysis you are performing so we can provide the best support possible.
- The Helpdesk can:
 - Point you to tables or dashboards with applicable data.
 - Create custom tables of data for your estimate/analysis.
 - Extract and send larger datasets than can be queried from EVAMOSC's front-end
 - Notify you of caveats or qualifiers applicable to the data which would impact your estimate/analysis



EVAMOSC Virtual Office Hours

- Occur every other Tuesday at 1400h eastern online.
- Come ask questions or let us know what we can help you with!



Quarterly Newsletter

- All EVAMOSC users are sent a quarterly newsletter highlighting significant releases and updates.
- Each newsletter is also posted on the public-facing website.



Data Availability Dashboard and Release Notes

- After logging into EVAMOSC, review the Data Availability Dashboard and our detailed Release Notes for currently accessible data and a list of changes by release.



We are here to help and want your feedback!

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