



OFFICE OF THE SECRETARY OF DEFENSE
COST ASSESSMENT AND PROGRAM EVALUATION

CAPE/Cost Assessment Update

April 14, 2022

Mr. Fred Janicki
Director, Space and Strategic Systems Cost Analysis

Topics

OSD CAPE

- History of CAPE
- CAPE Organization
- CAPE Cost Assessment (CA) Responsibilities
- CA Statute and Policy Update -- what's new?
- CADE & E-VAMOSOC

History & Functions of CAPE

- Established in 1961 by Secretary McNamara to analyze nearly every aspect of the DoD budget
 - Serve as an independent advisor to the Secretary and Deputy Secretary of Defense on programmatic resource allocation issues and decisions
- Weapons Systems Acquisition Reform Act (WSARA) of 2009
- Play a key role in the Planning, Programming, Budgeting, and Execution (PPBE) process
- Conduct Independent Cost Estimates (ICEs)
- Oversee Analyses of Alternatives (AoAs)
- Support Defense Acquisition Boards, JROC, Nunn-McCurdy Breaches
- Strategic Portfolio Reviews

CAPE Organization

OSD CAPE

Secretary of Defense
Deputy Secretary of Defense



Office of the Secretary of Defense,
Cost Assessment and
Program Evaluation (CAPE)

Program Resources
and Information
Systems Management

Analysis & Innovation

Cost Assessment

Program Evaluation

Capability Enablers

- Program Analysis
- Strategic Analysis and Wargaming
- Joint Data Support
- Analytic Innovation Lab

- Land and Naval Warfare Cost Analysis
- Air Warfare Cost Analysis
- Space and Strategic Systems Cost Analysis
- Cost Data Support Group

- Land Forces
- Naval Forces
- Tactical Air Forces
- Global Shaping and Posture
- Readiness and Force Employment

- C4 and Information Programs
- Intelligence, Surveillance, and Reconnaissance Programs
- Strategic Defensive and Space Programs
- Economic and Manpower Analysis

Cost Assessment Functions

OSD CAPE

The DCAPE is the principal official for independent cost estimation and cost analysis, ensuring that the cost estimation and cost analysis processes of DoD provide accurate information and realistic estimates of cost for the acquisition programs of the Department.

- Conducts independent cost estimates (ICEs) and cost analyses
- Prescribes policies and procedures for the conduct of cost estimation and cost analyses in DoD
- Reviews all cost estimates and cost analyses conducted in connection with major acquisition programs
- Conducts cost analyses of major programs to be procured using multiyear contract authority
- Prescribes policies and procedures for the reporting and collection of actual cost data and other related information for acquisition programs (CADE and EVAMOSOC)
- Provides leadership in the education and training of the DoD and other United States government cost analysis communities (~2,000 government analysts)
- Issues guidance relating to the full consideration of life-cycle management and sustainability costs in major acquisition programs
- Reviews each major acquisition program to ensure the program is adequately funded
- Produces an annual report on Cost Assessment Activities and DoD's progress to improve cost estimates and analyses
- Provides cost analyses in support of PPBE and PBR

I'm from CAPE and I'm here to help...

OSD CAPE

- The Land of “No!”
- “You never met a program you didn’t want to kill.”
- “You know the cost of everything, the value of nothing.”
- “It’s going to cost more and take longer, yeah, like we haven’t heard that before...”



Recent Changes to Law (1/2)

Fiscal Year (FY) 2016 National Defense Authorization Act (NDAA):

- *Section 804 – Created middle tier of acquisition for Rapid Prototyping and Rapid Fielding programs that are intended to be completed in 2 to 5 years*

FY 2017 NDAA:

- Section 842 – CAPE must conduct or approve independent cost estimate (ICE) for all MDAPs, regardless of MDA
- *Section 842 – CAPE must issue policies and procedures for collection of cost data for acquisition programs over \$100 million*
- Section 842 – CAPE must issue policy requiring discussion of risk in cost estimates
- Section 849 – Creation of sustainment reviews in Section 2441 of Title 10, United States Code
- Section 901 – Division of the office of the Under Secretary of Defense for Acquisition, Technology, and Logistics into office of the Under Secretary of Defense for Research and Engineering and the office of the Under Secretary of Defense for Acquisition and Sustainment

Recent Changes to Law (2/2)

FY 2019 NDAA:

- Section 832 – Develop a common data repository for all sustainment-related data, create and implement common data definitions, structure, and business rules
- Multiple sections on agile software development (pilot programs, training)

FY 2020 NDAA:

- Section 801 – Required ICEs for rapid software acquisitions, not based on source lines of code
- Section 821 – Granted DCAPE access to technical information on middle tier of acquisition programs

FY 2021 NDAA:

- ***Section 802 – Requires sustainment reviews (including an ICE) for all programs every 5 years, institutes Nunn-McCurdy-like thresholds for operating and sustainment cost growth***
- Section 807 – SECDEF to create new space acquisition pathway within Adaptive Acquisition Framework
- Section 1809 – Changes to Title 10 language for budgeting and appropriations
- Section 1812 – Changes to Title 10 language on cost estimating and analysis (10 USC 2334)
- Section 1856 – Changes to Title 10 language for services acquisition

Sec. 804. of FY16 NDAA:

- Created a new acquisition pathway not subject to the Joint Capabilities Integration and Development System
 - Mid-tier of Acquisition (MTA)
 - MTA-Rapid Prototyping (MTA-RP)
 - MTA-Rapid Fielding (MTA-RF)
- Directed DoD to develop regulatory guidance

DoD MTA Portfolio:

- ~100 active MTA programs totaling \$45B over the FYDP
- ~80% are ACAT II/III, which is below level of OSD acquisition oversight, totaling ~\$3B
- 18 MTA-RPs and 2 MTA RF are expected to exceed MDAP threshold

MTA Cost Analysis Challenges

Attributes of MTA Programs and Oversight:

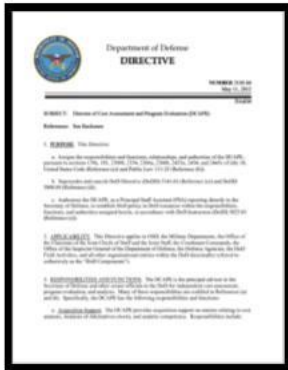
- Minimal Requirements Specification
- Minimal Documentation
- Cost Estimates and Transparency of Life Cycle Costs
- Full Funding of MTA Programs
- Reporting of Actual Costs and Cost Data Collection
- Lack of Formal DoD Commitment to MTA Programs Beyond Prototyping
- Limited Reporting and Databases of MTA Program Information
- Contracting using Other Transaction Agreements

CAPE has been an active participant in adapting OSD oversight and governance processes to accommodate the MTA acquisition pathway

- DoDI 5000.80, *Operation of the Middle Tier of Acquisition*, issued Dec 2019
- Advocating for additional sensible policy and procedure changes to enable the opportunities introduced by the new MTA authorities and ensure proper visibility and oversight

Sustainment Reviews

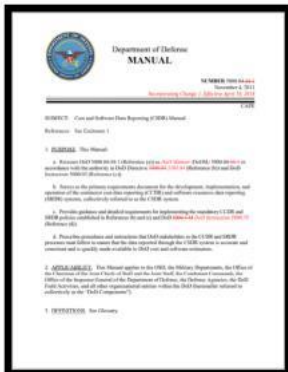
- Section 2441 of title 10, United States Code (U.S.C.), requires the Secretaries of the Military Departments to conduct Sustainment Reviews for covered systems.
 - Cover systems: more than \$300M RDTE or \$1.8B Procurement (in constant 1990 dollars)
 - Conducted every 5 years after initial operational capability
 - Requires an Independent Cost Estimate (ICE) for the remaining lifecycle
 - CAPE delegated the fiscal year 21 estimates to the Military Departments
- Section 802 of the National Defense Authorization Act Fiscal Year (FY)2021 revised section 2441
 - Report findings to Congress
 - Established a critical operating and support (O&S) cost growth metric
 - (A) of at least 25% more than the estimate documented in the most recent independent cost estimate for the covered system; or
 - (B) of at least 50% more than the estimate documented in the original Baseline Estimate (generally MS B APB) for the covered system.



DoD Directive (DoDD) 5105.84, “Director of Cost Assessment and Program Evaluation,” August 14, 2020



DoD Instruction (DoDI) 5000.73, “Cost Analysis Guidance and Procedures,” March 13, 2020



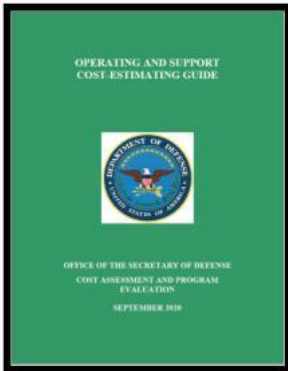
DoD Manual (DoDM) 5000.04, “Cost and Software Data Reporting Manual,” November 4, 2011

- Updated DoDM is almost complete, pending legal and security reviews
- Signature anticipated February 2021

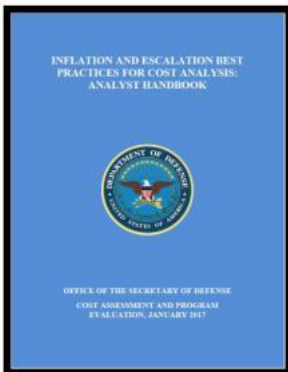
CAPE Cost Handbooks & Guides



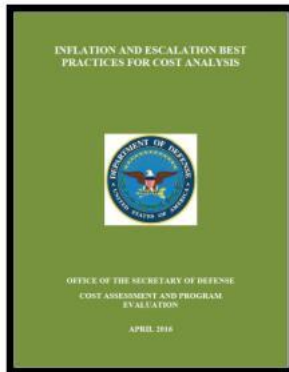
OSD CAPE, “DoD Cost Estimating Guide,” December 2020



OSD CAPE, “Operating and Support Cost Estimating Guide,” September 2020



OSD CAPE, “Inflation and Escalation Best Practices for Cost Analysis: Analyst Handbook,” January 2017



OSD CAPE, “Inflation and Escalation Best Practices for Cost Analysis,” April 2016

2022 – recently released update

2020 Update to DoDI 5000.73

Addresses cost estimates required for new acquisition pathways:

- Major Capability Acquisition
- Middle Tier of Acquisition
- Software
- Defense Business Systems
- Contracted Services

Includes Cost and Software Data Reporting (CSDR) requirements table

REPORT REQUIRED	WHEN REQUIRED
Contractor Cost Data Report	ACAT I-II Programs <ul style="list-style-type: none">□ All contracts, subcontracts, government-performed efforts, and major components (i.e., government furnished equipment), including FMS and programs in sustainment, regardless of acquisition phase and contract type, including non-FAR agreements, valued at more than \$50 million, then-year dollars, for current and former ACAT I – II programs.□ High-risk or high-technical-interest, as determined by the CSDR plan approval authority, or software contracts priced between \$20 million and \$50 million, then-year dollars.

Update to DoDI 5000.73

Major Capability Acquisition

- **CAPE conducts or approves independent cost estimates (ICEs) for MDAPs and major subprograms prior to:**
 - Milestone A
 - Milestone B
 - Low rate initial production
 - Full rate production
 - At any other time considered appropriate by DCAPE
 - Upon the request of USD(A&S) or the milestone decision authority
- **CAPE may conduct or approve an ICE or cost analysis to inform the Development Request for Proposal Release Decision Point**
- **At the discretion of DCAPE or upon the request of the Secretary of the Military Department, CAPE conducts or approves ICEs for sustainment reviews**
- **CAPE conducts independent cost analysis for certifications following critical Nunn-McCurdy breaches**
- **CAPE conducts a preliminary cost analysis and final cost analysis for multiyear procurement contracts**

Middle Tier of Acquisition

▪ Rapid Prototyping Programs

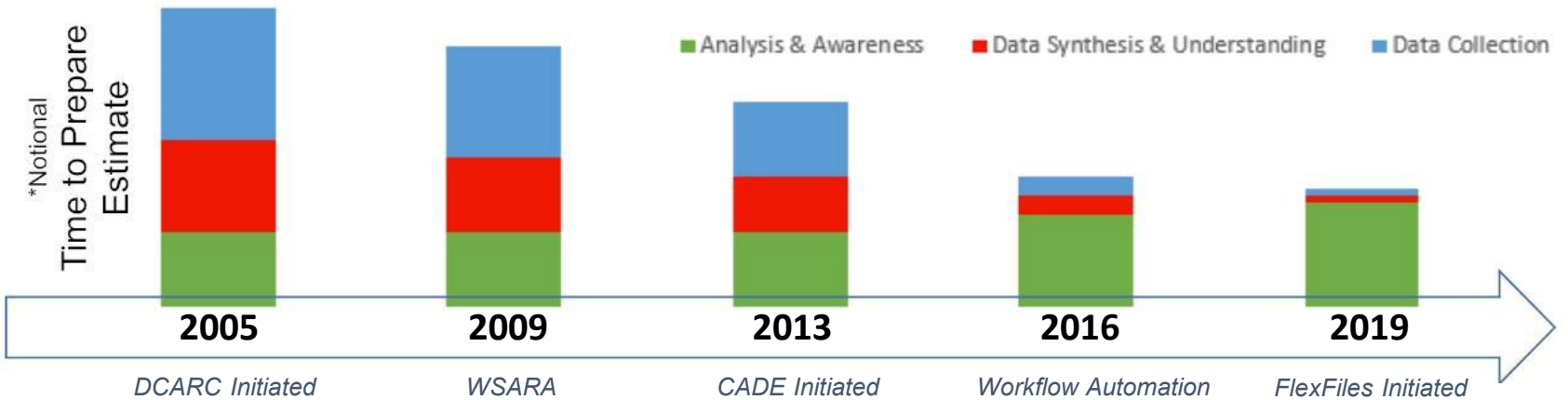
- CAPE or Service Cost Agency (SCA) conducts life-cycle cost estimates for programs likely to exceed acquisition category (ACAT) I thresholds
- Estimates for programs that do not exceed the ACAT I threshold must be conducted in accordance with guidance issued by the relevant SCA

▪ Rapid Fielding Programs

- CAPE or the SCA conducts life-cycle cost estimates for programs likely to exceed ACAT I or II thresholds
- DoD Components must conduct life cycle cost estimates for rapid fielding programs that do not exceed the ACAT II threshold in accordance with guidance issued by the relevant SCA
- Life Cycle cost estimate is required by statute

DoD Historical Cost Data Collection

OSD CAPE



Data Sources

- Program Office
- DACIMS
- SARs
- DAES
- Contractors
- Service O&S
- Data Libraries
- Colleagues Network

- **EVM-CR**
- DACIMS
- **DAMIR**
- Contractors
- Service O&S
- Data Libraries

- **EVM Visual Display**
- **DCARC Bulk Download**
- DAMIR
- Contractor Upload
- Data Libraries

- **Cost Community Data Sharing**
- Service O&S
- Automated Planning & Validation

- **FlexFiles**
- Cross-Program Search
- SAR Database
- Analysis-Ready Exports
- ACDB & JIAT Integration

Synthesis and Analysis



PDF
Manual Entry



Excel
Cut & Paste



Automated Entry
Manual Analysis



Seamless Knowledge
Sharing



Machine-Machine
FlexFiles

CADE replaced stove-piped service data collection and management

What is CADE?

OSD CAPE

The Cost Assessment Data Enterprise (CADE) team collects the **proprietary** data required to enable the cost estimating community to perform quality estimates while at the same time minimizing the cost and effort in doing so to enable accelerated acquisition timelines.

The screenshot shows the CADE website interface. The browser address bar displays the URL <https://cade.osd.mil>. The main content area is divided into five vertical panels, each representing a different data category:

- Cost:** Includes options for 'Browse/Export Prime and Subcontractor Cost Data' and 'FlexFiles'. A thumbnail image shows a spreadsheet.
- Acquisition:** Includes 'Program Information', 'SAR/MAR Annual Funding', 'SAR/MAR Schedule Events', and 'CARDS'. A thumbnail image shows a line graph with multiple data series.
- Technical:** Includes 'Software Database', 'Cost Analysis Requirements Documents (CARDS)', and 'Technical Data Reports'. A thumbnail image shows a grid of colored boxes.
- Sustainment:** Includes 'Maintenance & Repair' and 'CLS Cost Reports'. A thumbnail image shows a bar chart.
- Library:** Includes 'Cost Estimates', 'Funding Memos', 'Program Briefings', and 'Research Studies'. A thumbnail image shows a document page.

At the bottom of the screenshot, a blue banner contains the text: "CADE is the authoritative data source for estimating, analyzing, and managing Major Defense Acquisitions Programs".

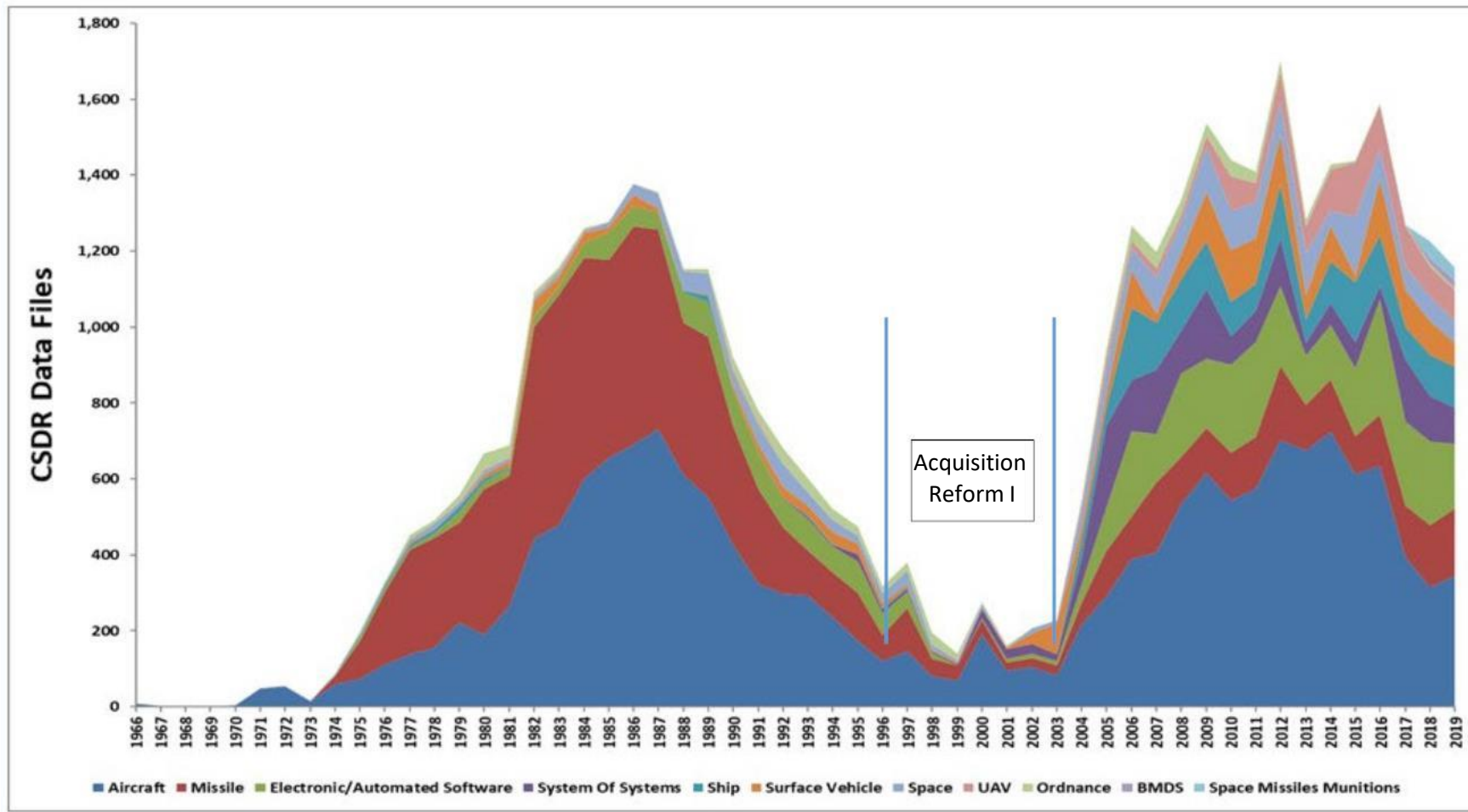


- ❖ 421 Active & 248 Legacy Weapon System Programs
- ❖ 4,505 Prime Contracts 1,836 Subcontracts
- ❖ 36,179 Cost & Software Data Reports
- ❖ 2,987 Government & Industry Users
- ❖ 360+ GIG Database
- ❖ 1.6M Physical SLOC
1.2M Logical SLOC

Available Cost Data (Accessible via CADE Repository)

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CSDR Data Collection Over Time



CADE Training & Community Engagement Overview

OSD CAPE

Regional Training/ Community Engagement

Regional Training Series Events**

REGIONAL TRAINING MID-ATLANTIC

- › DAU L@L Series | FlexFile Overview/Update | WebEx Broadcast | 24 June 2020 ✓
- › NAVAIR (PEO U&W, T) | CADE 201 | Pax River, MD | 21-22 July 2020 ✓
- › AFCAA | CADE 201 | Andrews, MD | 23 July 2020 ✓
- › CECOM (PEOs) | CADE 201 | Aberdeen, MD | 9 September 2020 ✓
- › DASA-CE/USMC/NAVSEA | CADE 201 | Fort Belvoir, VA | 30 September 2020 ✓
- › DCMA/PEOSs | CADE for KOs | Chester, VA/Norfolk, VA | 7 Oct 2020 ✓
- › PMO & PEOs | CADE for PMs | DAU- Ft. Belvoir, VA | 28 Oct 2020

REGIONAL TRAINING NORTHEAST

- › AFLCMC Hanscom | CADE 201 | Boston, MA | 5 November 2020

REGIONAL TRAINING SOUTH

- › AMCOM (PEOs), MDA | CADE 201 | Huntsville, AL | 20 August 2020 ✓
- › AFLCMC WRAFB | CADE 201 | Robins AFB, GA | 5 August 2020* ✓
- › AFLCMC Eglin/Industry | Eglin AFB, FL | 6 August 2020 ✓
- › Industry | Red Critical Program Office Visits | FL | TBD 2020 ✓

REGIONAL TRAINING WEST

- › Naval Postgraduate School | CADE & FlexFile 101 | Zoom, CA | 15 April 2020 ✓
- › AFLCMC | CADE 201 | Hill AFB, UT | 25 August 2020 ✓
- › SMC | CADE 201 | Los Angeles, CA | 26 August 2020 ✓
- › SPAWAR | CADE 201 | San Diego, CA | 27 August 2020 ✓

REGIONAL TRAINING MIDWEST

- › AFLCMC WP | CADE 201 | Dayton, OH | 22 September 2020 ✓
- › TACOM | CADE 201 | Detroit, MI | 23 September 2020 ✓

REGIONAL TRAINING (ALL-Virtual)

- › ALL SERVICES | CADE 201 | Virtual | 2 December 2020
- › ALL SERVICES | CADE 201 | Virtual | 9 December 2020

Community Engagement Events**

- › MORS Cost Analysis Workshop | CADE & FlexFile Update | Arlington, VA | 25-27 Feb 2020 ✓
- › MORS Symposium | CADE & FlexFile Update | New London, CT | 15-19 June 2020* ✓
- › CADE FOCUS GROUP | CADE & FlexFile Update | Arlington, VA | 21-22 October 2020
- › Government Contracting Symposium | CADE for KOs | Washington, D.C | TBD 2020*

* Tentative Events

** Excludes Monthly Telecons/Other 1-on-1 Industry Events

Bridge Learning Management System

<https://cade.bridgeapp.com>

Current CADE Learn Library (33 Courses)

CADE 101- Fundamentals of CADE

- › CSDR Policy, CSDR Reporting Forms, Sustainment
- › Validations , Portal Navigations: Data & Analytics

AVAILABLE NOW

CADE 201- Intermediate CADE Skills

- › -CSDR/ FlexFile Data Utility, Using CSDR Data for Credible Estimates
- › -SRDR Download (Browse CSDR Submissions) - 1921/ FF Comparison
- › -Advanced FlexFile Analysis -Analyze FlexFile across multiple programs

FlexFile 101- The Future of Cost Reporting

- › FlexFile Policy, Submission Process, IT Solutions, DILO Scenario

CADE for Project Managers

- › Insight into Contracting Fee, Utility of SAR Data, CSDR Compliance, Affordability Analysis, DILO Scenario

CADE For Contracting Officers

- › Value of Certified Cost & Pricing Data in CADE, CDRL Process, RFP Identification, DFARS, Other Than Cost & Pricing Data, DILO

CADE For Submitters

- › Submitter Guide, Creating Cost Reports using cPet, CSDR Submissions , Program Planning Module

Programs in Review/Development (10+ Courses)

CADE 301- Other CADE Initiatives (Tech Data , -M/R)

What is EVAMOSC?

Enterprise Visibility and Management of Operating and Support Costs (EVAMOSC) is a data platform that collects and reports actual operating and support (O&S) cost data for all major weapon systems.

OSD CAPE has a statutory requirement to develop an enterprise O&S cost database (EVAMOSC) that includes common:

- Data repository for all sustainment-related data
- Data definitions, structure, and business rules for sustainment cost data
- Data taxonomy and data dictionary for all Service O&S cost data
- Logon procedure to access all Service O&S cost data

EVAMOSC cost data will be reported using the cost element structure described in the 2020 OSD CAPE O&S Cost Guide. Utilizing the O&S Cost Guide will ensure data definitions, business rules, and taxonomy are standardized across all Services and weapons systems.

OSD CAPE is collaborating with the Services to ensure EVAMOSC data is accurate, consistent between the Services, clearly documented, and informative.

The data in EVAMOSC will not only address capability gaps in the cost community, but will also be useful in program review, readiness planning, and the acquisition community.

Questions?