



# **Enterprise Data Management (EDS) - Enabling Data Discovery and Access Across International Boundaries**

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US Army Program Executive Office  
Simulation, Training, and Instrumentation

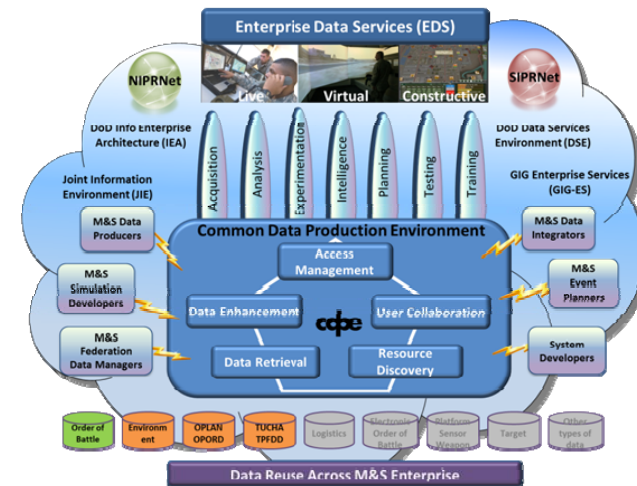


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# EDS An Enterprise Data Capability



- Warfighters greatly benefit by reusing data for acquisition, testing, experimentation, analysis, planning, training, and operations. New and agile processes with rapid access to data sources are needed to rapidly represent a realistic dynamic operational environment.
- Multiple scenario data generation systems exist; however, it is difficult to find, obtain, and reuse data to support Army events. If you can find current data, it is difficult to obtain the data. If you can obtain the data, it is difficult to understand and transform data for your use.
- EDS provides a M&S enterprise common data production environment that brokers access to distributed cross-community and cross-Service data discovery, retrieval, and enhancement capabilities through enterprise web services.





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# Army M&S Strategy

EDS

- **Signed out (July 2014) by the Secretary of the Army and Chief of Staff of the Army**
  - **Key statements that show need for EDS**
    - “Enterprise consists of...tools, data products...” (Page 4)
    - “M&S and associated data to be accredited” (Page 7)
    - “Enable accessibility, discoverability, and reuse...data” (Page 7)
    - “Facilitate enterprise-level shared identification...” (Page 7)
    - **“Promote the sharing of tools, data...across the Army”** (Page 10)
    - “Employ tools in the form of models, simulations, and data” (Page 10)
    - **“The Army must have credible M&S tools and data to support the full range of Army organizational missions”** (Page 11)
    - “M&S users, managers, and developers will have the ability...reuse...and data” (Page 12)
- OneSAF, supporting all of the M&S community, **requires data**





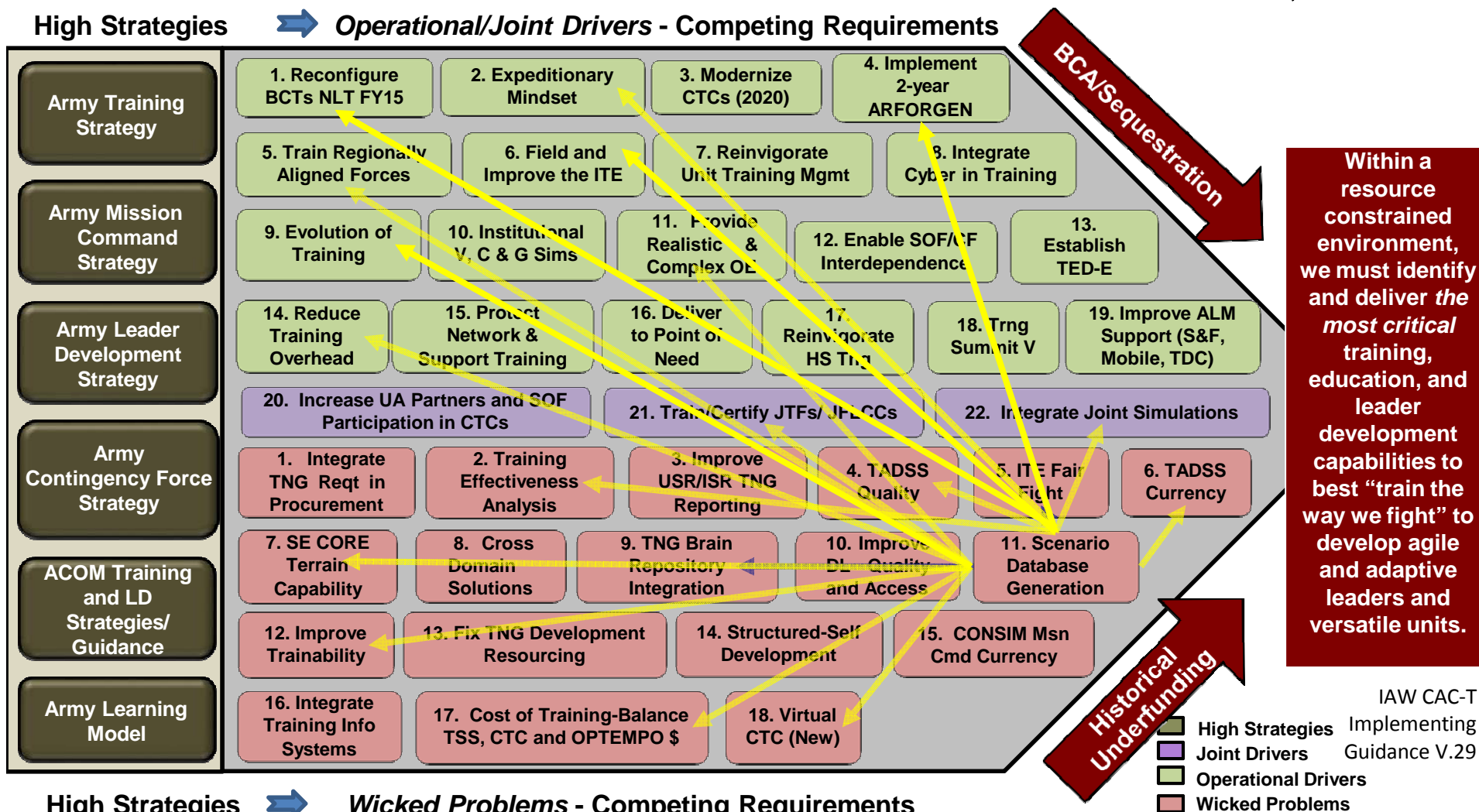
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# EDS Impact on CAC-T

EDS

The High Strategies (ATS, ALDS, AMCS), ACOM Training Guidance, the Army Learning Model, Proponent Strategies, other HQDA policies and guidance, identified wicked problems, and Joint capabilities all drive training requirements.



It's about the Data and EDS is that Data Solution!





# TCM ITE Advocacy

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- TCM ITE advocates EDS as necessary for M&S communities of interest in support of Home Station, CTC's, and WFX Training with Joint Enablers
- There is currently no effective or efficient way for exercise developers to access and retrieve accurate, authoritative data needed to develop exercise databases.
  - This gap effects training relevancy, TADs system functionality, long lead time and cost to develop exercise databases, and lack of Training consistency across the Non-System Instrumented and Training Devices (NSITDs)
- TCM ITE recommends resources of EDS to:
  - Bring Authoritative and relevant Data Sets together through common data set standards so that today's and tomorrow's NSITDs reflect and keep current with the ever changing Complex Operational Environment (OE) in a cost effective and efficient manner





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# Cost Benefit Analysis

EDS

- M&S communities generally have established practices in place to obtain needed data
  - Training community seems to be embracing EDS
  - Some communities seem unsure as to utility at this point and may have under-reported potential benefits
  - Even if an organization may benefit, unless they want to use RDG they won't
  - Educational outreach may lead to a shift in current business practices
- Authoritative sources and governance are needed
  - Ensure providers create and refresh metacards for available datasets
  - Ensure datasets are credible
  - Define standards for data formats
- Potential for increased benefits over time
  - Additional participation from data providers (other Services expressing interest)
  - New users/existing users may discover additional benefits





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## CBA Observations – Key EDS Capabilities

EDS

- Order of Battle
  - Benefit for organizations without access to military expertise
- Environment – Terrain and Weather
  - Terrain is a big and costly challenge
    - Re-using terrain databases can avoid development expense
    - Even locating existing terrain databases can be a time-intensive effort
  - Large number of Army models and simulations makes it difficult to support multiple terrain formats
    - Some organizations have unique simulations
  - Metacard catalog of terrain datasets may reduce duplication, facilitate collaboration, and provide visibility of available data
- Data Enhancement Services
  - Terrain translation tools are critical
    - Skepticism exists if viable tools are possible
  - OOB information is generally not “machine readable”
    - Emphasizes the importance of translation to standard formats







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# CBA Summary

EDS

- Study shows EDS has the potential to benefit Army M&S communities – break-even point in FY24 and 25% ROI over study timeframe
- Translation tools / data enhancement services are critical to achieving the cost avoidance identified in this study
- Established practices can work for or against EDS – educating the community on potential benefits could increase use







# Management Strategy to Meet Needs

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# EDS

## EDS Oversight



CAA / AMSO



JS J6



AT&L /  
M&S CO

- Army Data Enhancement Tool Priorities

- JS Priorities
- JTEA Architecture Alignment

- Coalition data sharing priorities



Army  
DCS G-8

- Army M&S Strategy
- Army Cross-Community Priorities



OUSD(P&R)

- P&R Data Policy (DoDI 1322.yy)
- DoD Cross-Service Training Priorities

PEO STRI

- Stakeholder (producers and consumer) needs – interviews and workshops
- Requirements validation through use cases



NSC  
Army

- Requirements validator (proposed)



America's Force of Decisive Action

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**ARMY STRONG.**



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# Requirement Generation



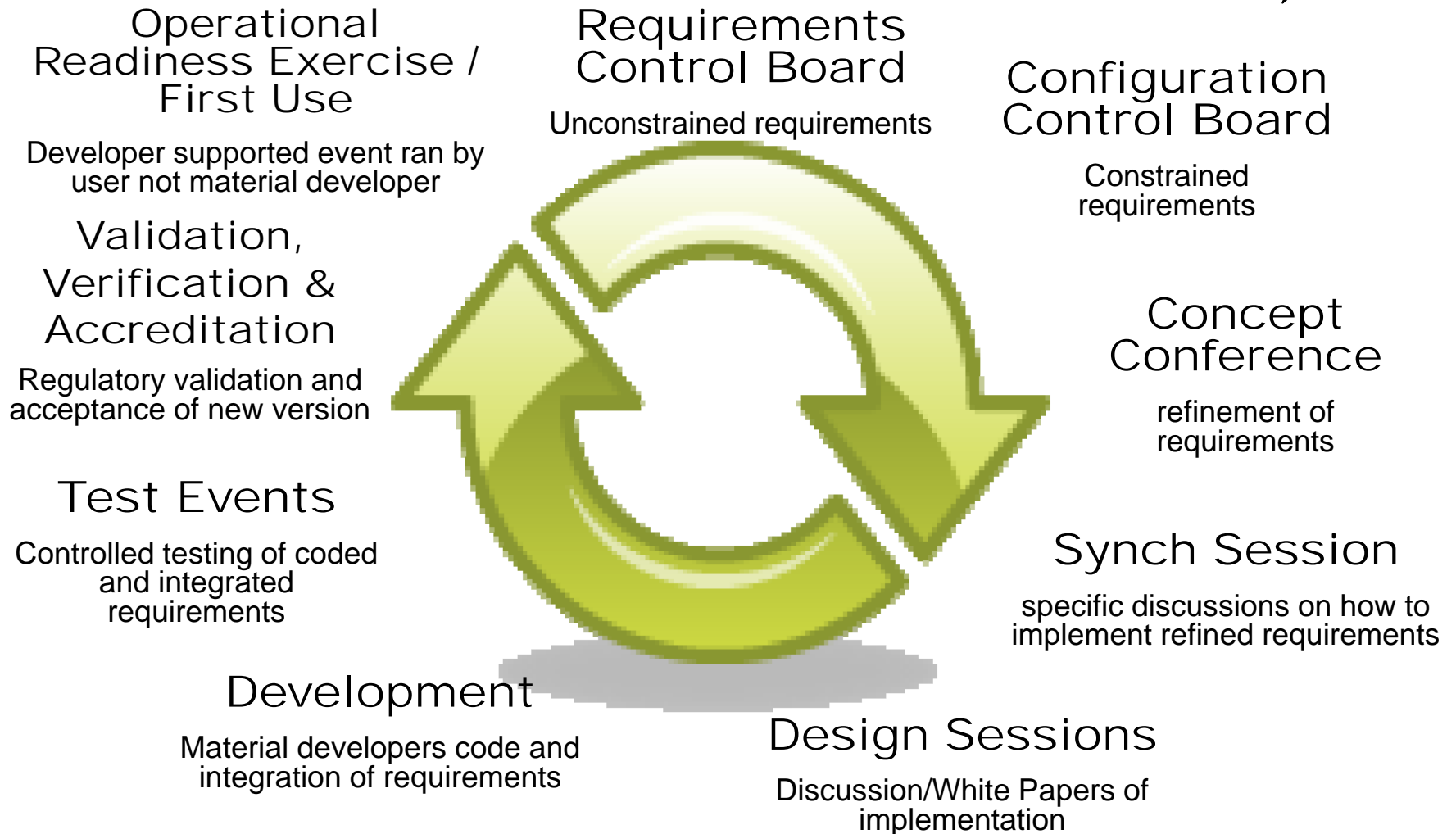


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# EDS Capability Development Process

EDS



# Division of Responsibilities

## EDS Team

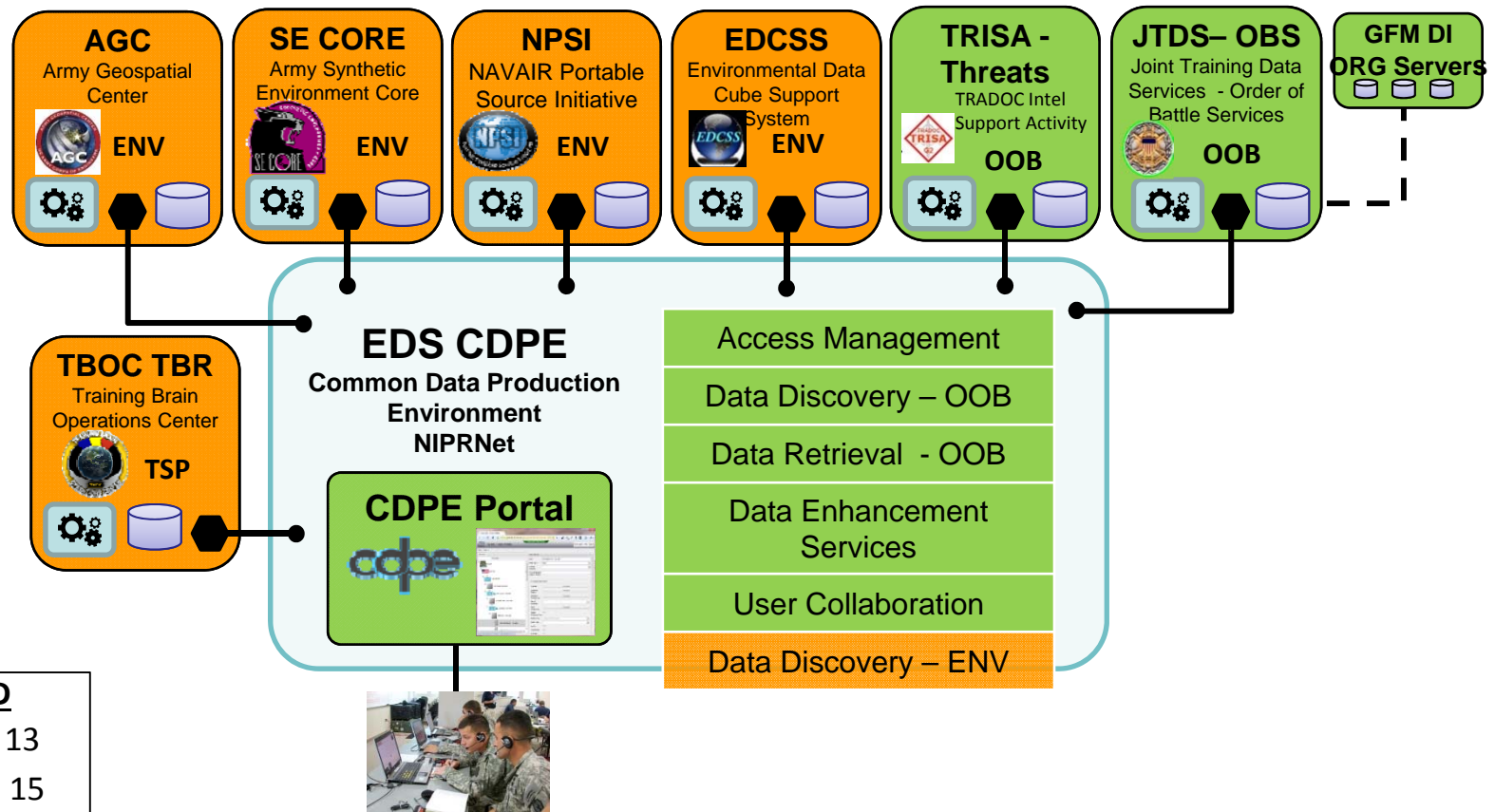
- Systems engineering lead
- Develops interfaces and metadata standards
- Provides a web-based user interface
- Harvests metadata from providers
- Passes distributed queries to providers
- Provides metadata cache
- Passes data requests with requestors credentials to providers



## Data Providers

- Works with EDS team to define appropriate metadata
- Creates, maintains, and stores metadata locally
- Provides services for harvesting and/or live search of metadata
- Sets metadata access policy
- Sets data access policy
- Provides data request service
- Provides data access services

# EDS CDPE - Today



**Reuse of Integrated and Correlated OOB and Environment Data and Weather Effects Generation**



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# CY15 Build Plan *(as of 12 May 2015)*



## CDPE SW Delivery

**CY15 Rel1**

Jun 2015

**CY15 Rel2**

Sep 2015

**CY Rel3**

Dec 2015

## Added Capability

- Semantic Search
- Improved search GUI
- Static/moving model discovery
- Simulation-ready TRISA Threats data
- SOF Terrain discovery

- Army GFM DI force structure discovery/retrieval
- Entity type management service
- Equipment C&P discovery and retrieval
- Entity alignment service
- USAF Terrain discovery
- User Collaboration

- Intelligence data discovery
- Unclassified OPFOR C&P data discovery and retrieval
- OOB Alignment service
- C&P Alignment service
- ENV data retrieval
- ENV data enhancement services

## Added Providers

- Entity  
Army Model Exchange (AME)
- WEG class definitions

- Entity  
Army Organization Server (AOS)
- Entity C&P  
AMSAA Equipment Characteristics Database (ECDB)
- AMSAA Standard Nomenclature Database (SND)

- Terrain  
SDBF
- SOFPREP

- Force Structure  
Modernized Intelligence Database (MIDB)
- TRISA Worldwide Equipment Guide (WEG)
- NASIC





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# Development Plan – CY15

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EDS

## Common Data Production Environment (CDPE)

### OOB Data

- Authoritative force structure data
- Characteristics & performance data
- Electronic OOB data
- 2/3-D Static & moving models
- OOB data services

### ENV Data

- Integrated and correlated terrain data
- Terrain data retrieval
- Terrain data enhancement services

### Usability

- Improved graphical user interface (GUI)
- Semantic Search
- Improved search results visualization

### Collaboration

- Promote data reuse
- Promote trust between providers and users
- Promote best practices
- Promote standards convergence

### Coalition

- Support Mission Partner Environment (MPE) data sharing objectives
- Authorized access





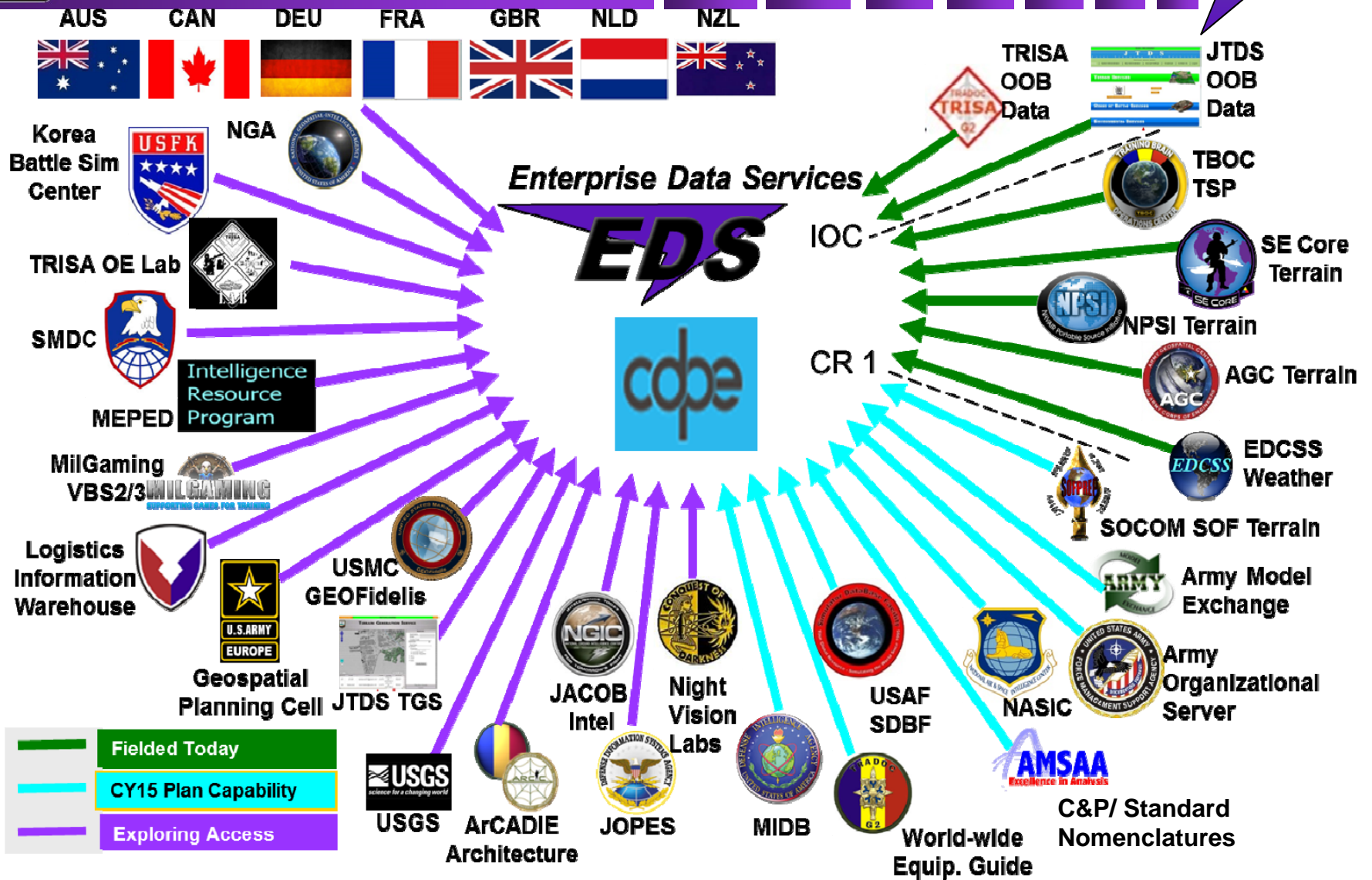


# EDS Data Provider Integration

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## EDS



# Challenges

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- Ensuring that the data sharing process is consistent with US and participating laws and regulations
  - ITAR - International Traffic in Arms Regulations
  - EAR – Export Administration Regulations
- Data Exchange Agreement Persistence
  - Data Exchange Agreements typically valid for a one-time data exchange
  - For EDS to be effective
    - persistent permission to share metadata must exist
    - Persistent permission to exchange data desirable

# Questions?

*Enterprise Data Services*

**EDS**

