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# EXECUTIVE ANALYTICS STARTER KIT FOR OPERATIONAL DATA TEAMS

8 SEPTEMBER 2021



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DISCOVER. UNDERSTAND. DECIDE.



# Overview

- An aspect of the Operational Data Teams' mission in support of the Combatant Commands (CCMD) is to “scale existing platforms and assist warfighters in making their data visible, accessible, understandable, linked, trustworthy, interoperable, and secure.”\*
- The Advana platform is one capability available to these teams. Advana has been named as both the single enterprise authoritative data management and analytics platform for the SD, DSD, and Principal Staff Assistants, and the enterprise service provider for Unclassified and Secret data cataloging.
  - Through these roles, Advana has developed a robust catalog and repository of DoD authoritative data sources; a tech stack of COTS tools for data ingestion, storage, processing, governance, visualization, and analysis; common data models; and multiple web applications, tools and services used throughout the Department.
  - The Operational Data Teams, and the CCMDs they support, can leverage the existing data sources, common data models, visualizations, and development processes/structures as a foundation for improving data visibility, facilitating data-driven decisions, and understanding how the CCMDs are currently represented in applications used by the SD, DSD, and Principal Staff Assistants.



# What is Executive Analytics?

Executive Analytics on Advana is the Office of the Secretary of Defense's authoritative data management and analytics platform. The suite of Executive Analytics applications inform senior leader decision making through their integration into senior governance forums and development of analytic products. Overall, Executive Analytics aim to provide a common operating picture for senior leaders for both business/management areas and policy/operational matters.

The road to Executive Analytics began in 2019, when the SD/DSD Immediate Office partnered with Advana and Components across the Department to develop the National Defense Strategy (NDS) Core Metrics application. Over the past 18 months, Executive Analytics has expanded to include new applications and focus areas.

Executive Analytics focus areas fall into two major categories: Business Health and Strategic Priorities.

Business Health metrics are designed to assess the performance of major ecosystems within the Department. These metrics provide indications and warnings of issues that require leadership attention. Business Health metric reviews at senior governance forums ensure a recurring, executive-level look at the major ecosystems within the Department, allowing senior leaders to quickly and efficiently track performance and identify issues requiring their attention.

Strategic Priorities focus areas align to major change management initiatives in the Department. These metrics, developed in partnership with Component leads, help inform governance forums like the Deputy's Workforce Council and the Climate Working Group.

## 2019 NDS Core Metrics Focus Areas

- Financials and PBR
- People
- Readiness
- Modernization
- CCMD Activities
- Planning System
- GFM
- Tech Domains
- Reform
- Allies and Partners
- Force Dev.
- Strategic Comp.
- Digital Modernization



## Strategic Priority Focus Areas

COVID-19   Strategic Competition People+   Innovation   Climate

## Business Health Focus Areas

Financials   People   Programs   Operational Health   Digital Modernization   Logistics and Mission Support



## Executive Analytics Should Facilitate Better Decision-Making

- Advana, the DoD Chief Data Office (CDO), and the SD/DSD Front Office developed Executive Analytics to enhance senior leader decision support and governance processes.
- Understanding that every CCMD has a unique decision cycle at the CDR, VCDR, and J-Dir levels, Executive Analytics should be grounded in those key processes and forums. Executive Analytics provides an adaptable platform for ensuring senior leaders can access priority information at the speed of relevance to support management and policy decisions.
- Adding CCMD-specific authoritative data into the existing Executive Analytics structure will allow the Operational Data Teams to rapidly develop analytics in Executive Analytics that are more targeted to CCMD use cases.



To hit the ground running,  
we recommend you follow these eight core principles:

- 1 Follow the Development Stages
- 2 Structure Analytics using the Existing Terminology
- 3 Consistently Utilize the Tiered Structure in Applications
- 4 Leverage & Adapt Existing Analytics
- 5 Use Analytics to Enhance Existing Processes
- 6 Follow Development Best Practices
- 7 Take Advantage of Advana's Data Handling Options
- 8 Reach Out to POCs

**And don't reinvent the wheel!**

# P1. Follow the Development Stages

These stages help guide functional area leads through a structured development process, aimed at ensuring efforts are linked to strategic priorities. Starting by understanding the “right” strategic questions, and targeting data and establishing time-bound measurable goals to track outcomes, ensures data is not only visible but is leveraged to provide decision-support at the speed of relevance.



## Executive Analytics

### Development Stages\*

- 1 Identification of the right questions
- 2 Authoritative data identification and automated ingestion
- 3 Data model validation (resolving policy problems)
- 4 Baseline of what to measure (goals and metrics) and relook at the “right questions”
- 5 Integration into DoD processes (governance)
- 6 Full Operational Capability and integration with other focus areas
- 7 Predictive modeling

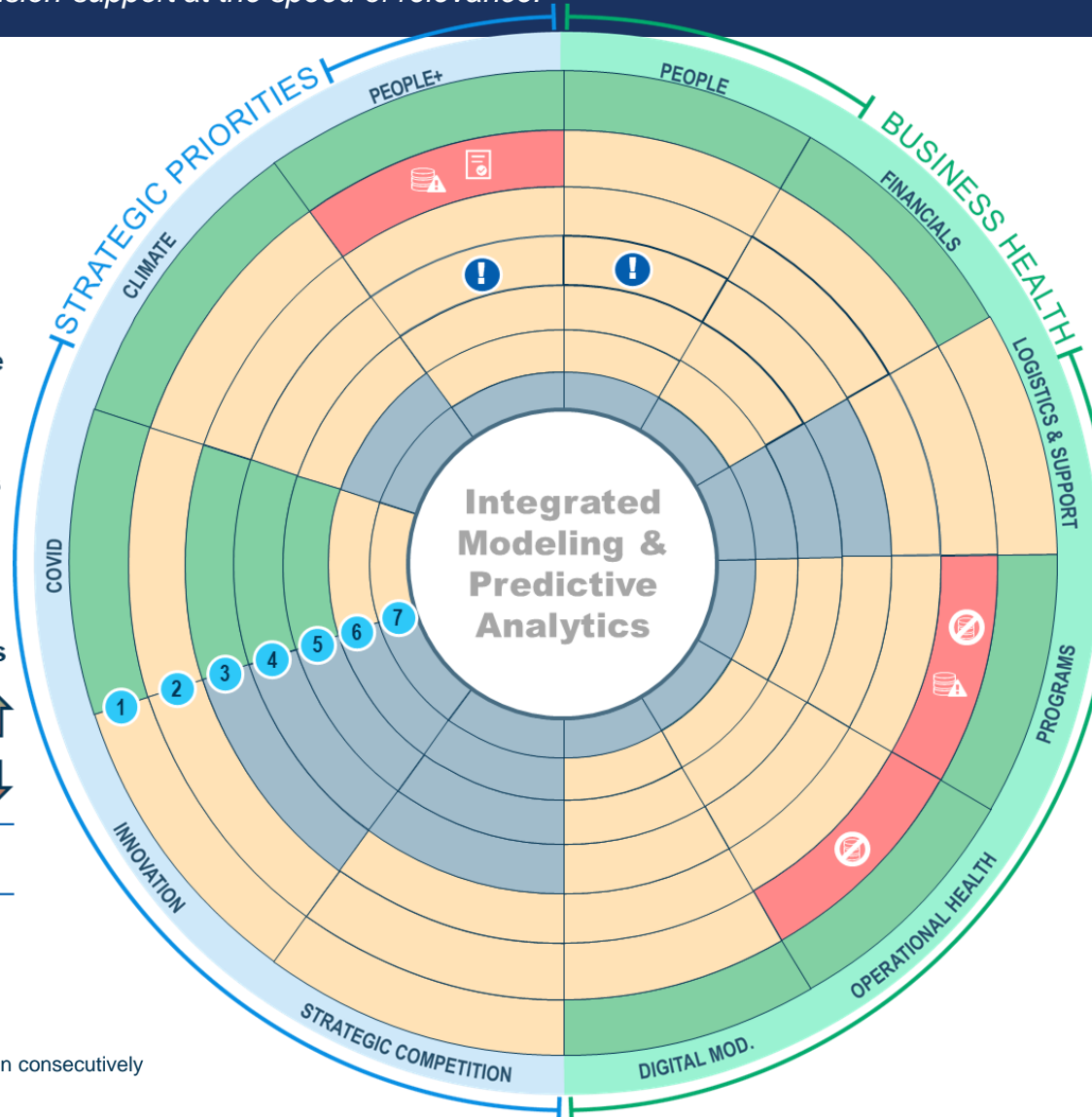
### Development Status

● Not Started  
● In Progress  
● Completed  
● Blocked  
! Pending Senior Leader Engagement

New Status this Week

↑ Status Trends  
↑  
↑  
↓  
↓  
↓

date Expected Status Change



### Key for Blocked Items

- ⊗ Resources
  - Lack of developers
  - Lack of funding
- ⊗ Policy & Standards
  - Lack of common definitions and standards
  - Lack of policy supporting data integration and linkage to authoritative sources
  - Security Classification Guidance requirements
- ⊗ Data Access
  - Data owner reluctance to share data
  - Data not in a structured system
- ⊗ Poor Data Quality
  - Accuracy
  - Consistency
  - Timeliness
  - Integrity
  - Completeness
  - Repeatability
  - Conformity
- ⊗ Technology
  - Source system can't support automation
  - Data provided in proprietary format

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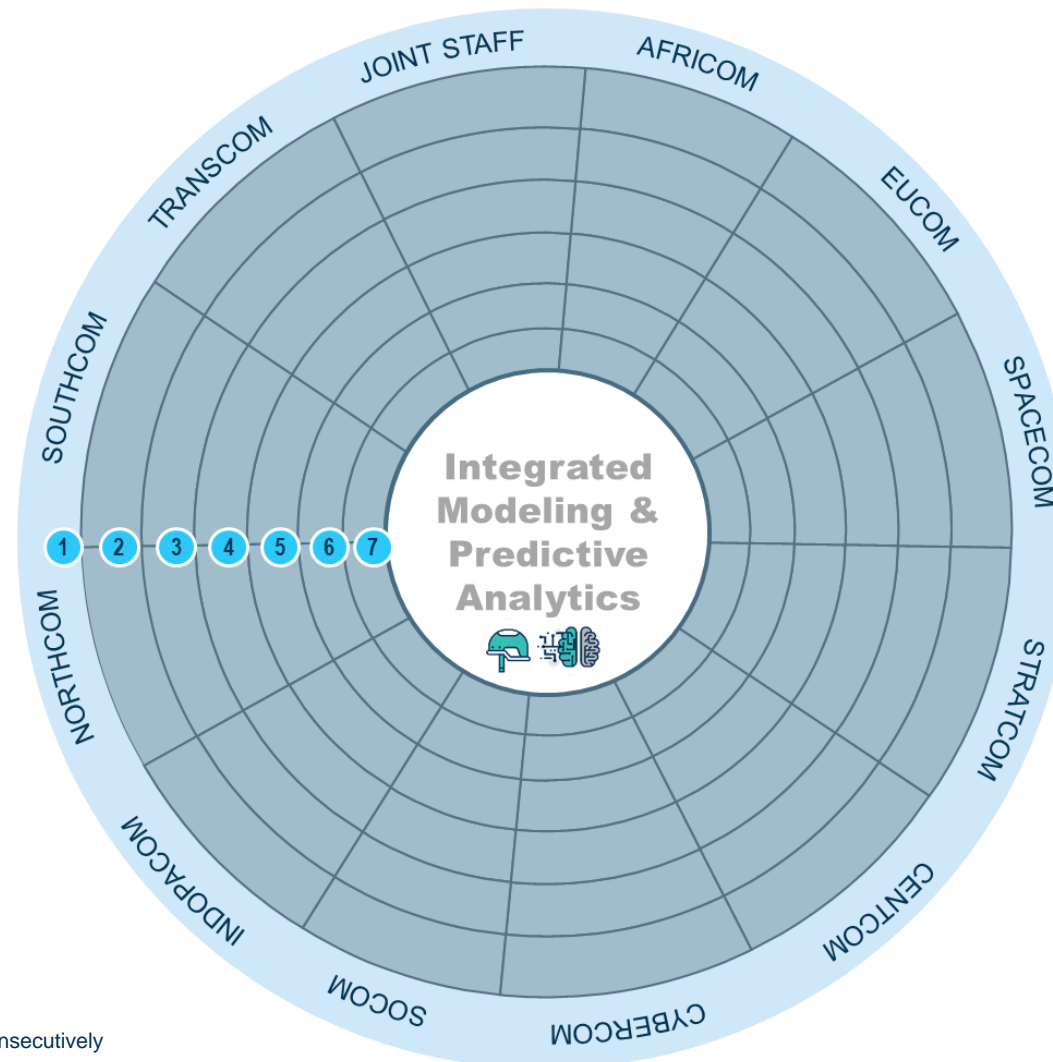
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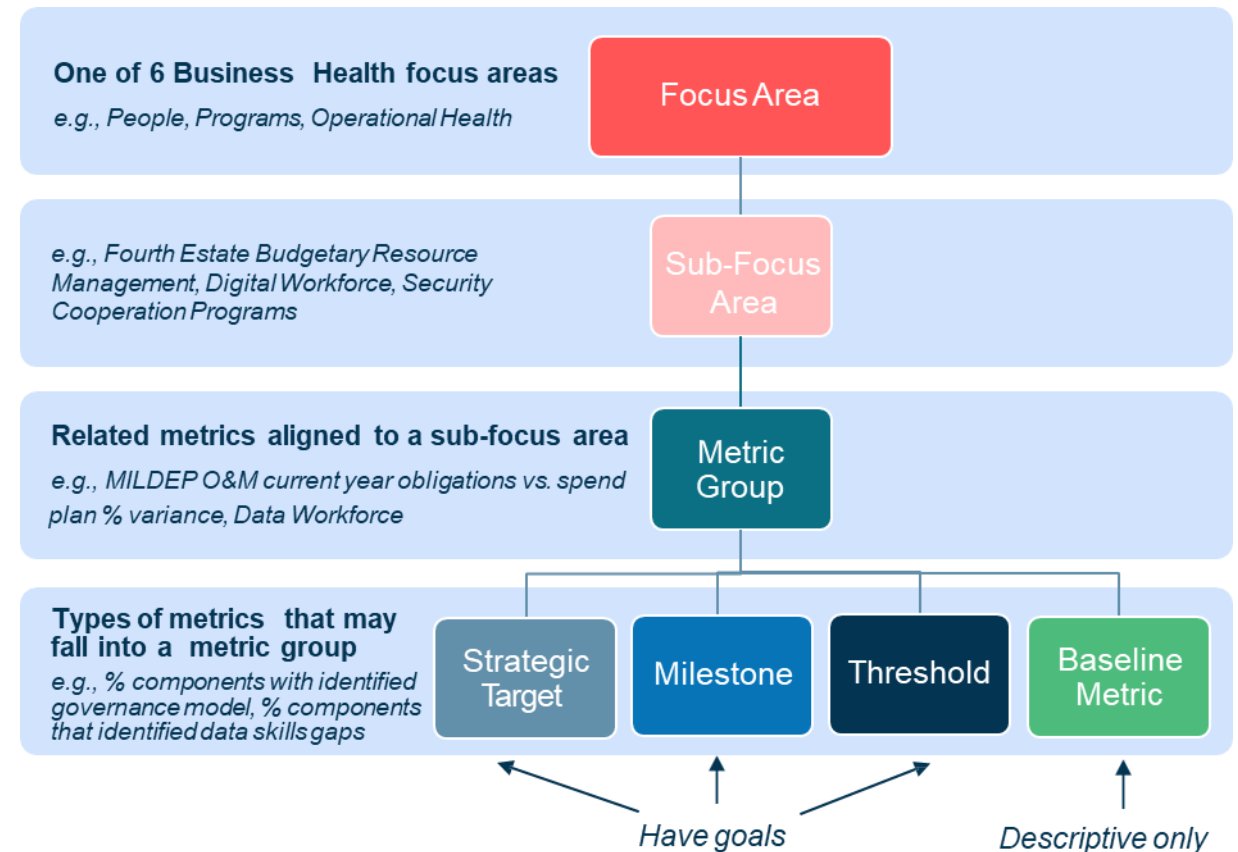
# P2. Structure Analytics using the Existing Terminology

The following standardized terminology is used across Executive Analytics applications to ensure consistency and clarity in communication about analytics and their ontology. All new use cases are strongly encouraged to use the same construct to provide uniformity in the decision-support tools presented to leadership.

## Terminology

- **Strategic Goal:** Discrete, high-level actions to implement the NDS
- **Focus Area:** One of 6 thematic areas identified as components of Business Health measurement
- **Sub Area:** One of four tiers under each Focus Area.
- **Metric Group:** A number of related metrics aligned to the same focus area and answering the same objective
- **Metric:** A quantifiable statistic that measures a certain aspect of the Department's operations
  - **Strategic Target:** A metric with a time-bound and measurable objective tied to a strategic goal
  - **Milestone:** A metric reflecting the status of a binary, time-bound action or event
  - **Threshold:** A metric with a defined maximum and/or minimum
  - **Baseline Metric:** Descriptive information with contextual data relevant to a Focus Area or Metric Group

## Construct





## Landing Page (Tier 1)



Major baseline numbers, performance roll-ups, and watch lists for each business health focus areas

## Focus Area Pages (Tier 2)



(e.g., Digital Modernization, Programs)

Major baseline numbers, performance roll-ups, and watchlists for the four clusters underpinning each business health focus areas

## Organizational Page (Tier 2)



(e.g., CIO, A&S, EUCOM)

## Metric Pages (Tier 3)



(e.g., Data Maturity, MDAP ratings)

Detail view of a metric group, including multiple metrics/KPIs (e.g., one for each Service)

## Common Metric Template for all Tier 3 pages



# P3. Consistently Utilize the Tiered Structure in Applications

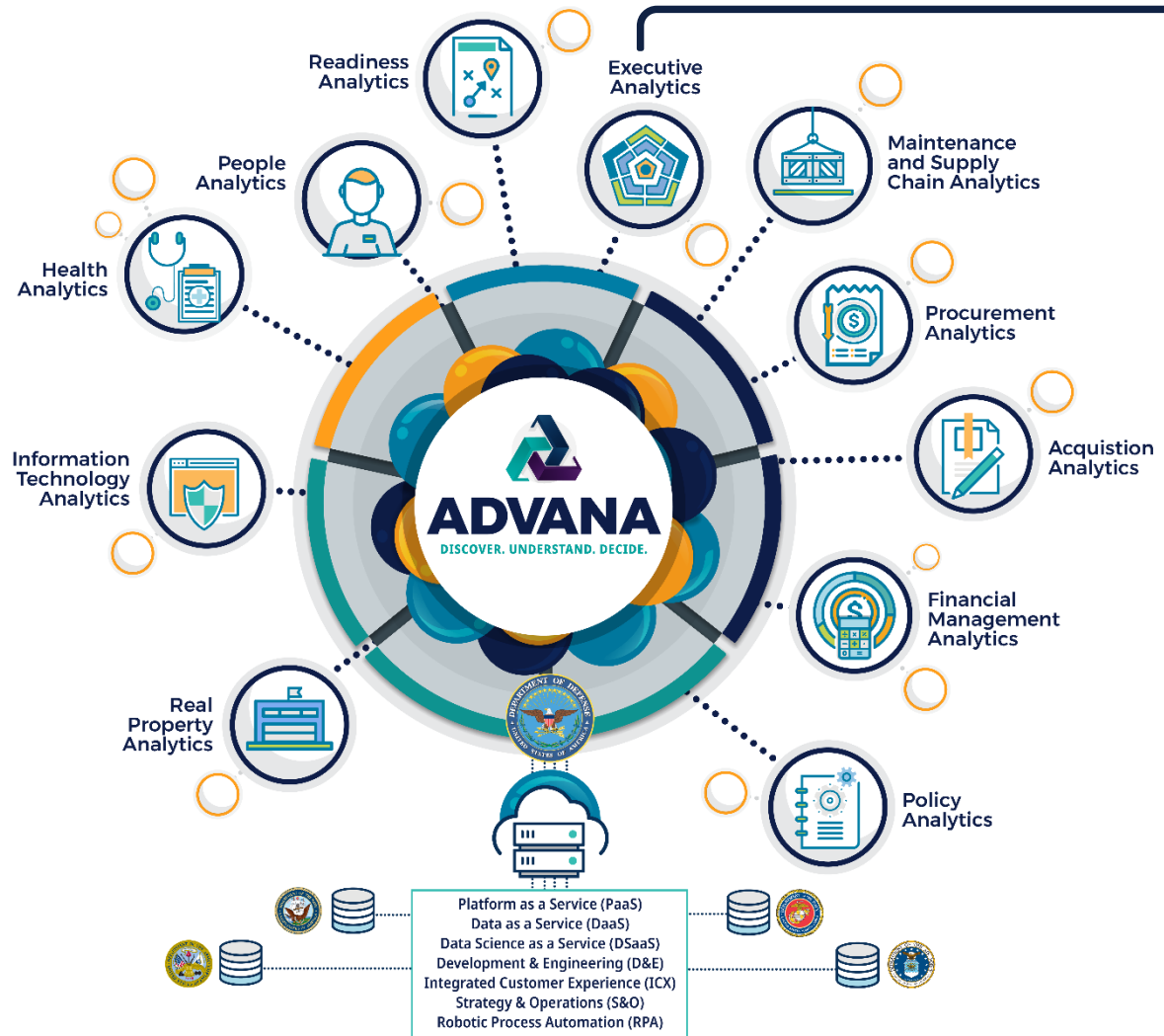
Executive Analytics applications are developed using a tiered structure. Tier 1 provides the highest level roll-up for a strategic overview of performance. The tiers run to level 3, organized by metric group and showing specific metrics all measured as a binary meeting or not meeting the goal.

This structure allows metrics to be easily incorporated into multiple applications, ensuring consistency in the various dashboards and views shown to leadership.

# P4. Leverage & Adapt Existing Analytics



Before diving into analytics and dashboard development, review existing applications in Advana. You can leverage existing data pipelines, data models, and analytics as a starting point. These existing applications will also show how senior leadership (SD, DSD, CJCS, VCJCS, etc.) see your organization represented in DoD-wide visualizations. New sources specific to your CCMD should be additive to the existing set of analytics.



## Executive Analytics:

- Business Health
- COVID
- People+ (e.g., diversity, high risk installations)
- Strategic Competition
- Innovation
- Climate
- Cross-cutting Senior Leader Dashboards



## P5. Use Analytics to Enhance Existing Processes

*Existing Executive Analytics applications and new use cases should integrate into existing analytic and management processes. Automating visualizations presented in governance meetings/included in analytics products and reducing the need for recurring data calls both gets data in the hands of senior leaders at the speed of relevance and frees up staff time for more higher-level analysis.*

- **Governance Forums:** Facilitate data-driven decision-making at existing governance forums, allowing senior leaders to base discussion on a common operating picture for both business/management areas and policy/operational matters.
- **Recurring Analytic Updates:** Automate charts and other visualizations produced for recurring analytic updates, so analysts can spend more time on the “so what”.
- **Data Calls:** Shadow data call efforts and establish an agreed upon methodology to automate them for the future, allowing information to stay up to date without rounds of onerous data calls.

## P6. Follow Development Best Practices



*Development of Executive Analytics applications currently used by DoD senior leaders has emphasized the importance of following development best practices to facilitate user-centered design.*

- **User Interviews:** Meet with users to understand their goals, challenges, and desires early in the development effort.
- **Personas:** Develop user personas to ground development requirements in user needs.
- **Usability Sessions:** Hold usability sessions to test new features and dashboards.
- **Recurring Framework for User Experience Feedback:** Establish a battle rhythm for user feedback sessions to generate ideas on how to improve the user experience.
- **101 Sessions/Officer Hours:** Host 101 sessions or office hours to help users understand the tools and dashboards available to them.



## P7. Take Advantage of Advana's Data Handling Options

*As new data sources are identified to enhance and expand Executive Analytics in support of the CCMDs, leverage Advana's data handling options for sensitive sources.*

### **Scalable storage and compute:**

- Cloud native services allow auto-scaling of infrastructure based on demand.
- Configuration of compute resources to take advantage of auto-scaling and ensure timely execution.
- Management of data storage through automated query monitoring to determine proper indexing and partitioning for performant data access.

### **Multi-tenancy support:**

- Access control model that supports complete logical separation of tenant datasets through role-based access control (RBAC).
- Ability to isolate workloads into dedicated clusters for data segregation during data preparation.
- Utilize the same access control to logically separate data within business intelligence, data science, and other tools on the platform.

### **Fully-staffed service desk:**

- Tier-based approach ranging from Tier 1 support specialists to resolve everyday issues to Tier 3 subject matter experts that can quickly resolve complex problems when they arise.

### **Sensitive data handling:**

- All data residing on the infrastructure will take advantage of full disk encryption and transport layer security encryption in transit necessary to support sensitive data handling such as Personally Identifiable Information (PII).

## P8. Reach Out to POCs



*The following points of contact can serve as resources for the Operational Data Teams and CCMDs to help understand the applications currently supporting DoD senior leaders, data available on the platform, development best practices, and tools available to Advana users and developers.*

### **Executive Analytics**

Jenny Sue Ross (DoD CDO); jennifer.s.ross13.civ@mail.mil

Nick Lanham (Advana); nicholas.a.lanham.civ@mail.mil

### **Advana Data Operations**

Cody Ferguson; cody.a.ferguson9.civ@mail.mil

Erin Mills; erin.f.mills2.civ@mail.mil

### **CCMD Activities Application**

Patrick Fulton (Advana); patrick.t.fulton3.civ@mail.mil

### **Advana Data Science as a Service**

James Doswell; james.p.doswell.civ@mail.mil

### **User Experience and Design Best Practices**

Mitchell Fiedler (Advana); mitchell.w.fiedler.civ@mail.mil

Jenny Sue Ross (DoD CDO); jennifer.s.ross13.civ@mail.mil

### **Advana Platform**

Alex O'Toole; alexander.s.otoole.civ@mail.mil

# BACKUP





# Advana Account Requests

Welcome to the Advana Service Desk

What do you need help with?

## Request Types

Account Requests

Help Desk Requests

Data Science Requests

RPA Requests

Customer Feedback



### Access Request

Use this request to modify your access on NIPRNet or SIPRNet.



### Request Access to COVID-19 Apps

Request access to the COVID-19 Apps in Qlik



### Request to Deactivate an Account

Please complete this form to request the deactivation of a user account.



### Request Access to Executive Analytics

Request access to the Executive Analytics Apps in Qlik

## Access Forms



Service Desk Tutorial



DD Form 2875 (SAAR)



DD Form 2875 (SAAR) Instructions



Rules of Behavior

## Request Access

<https://support.advana.data.mil/plugins/servlet/desk/portal/5>

## DD2875 (SAAR) Instructions

<https://wiki.advana.data.mil/display/SDKB/DD2875+SAAR+Instructions>

## Training Materials

<https://wiki.advana.data.mil/pages/viewpage.action?pageId=16941354>



# Advana CCMD Info Page

Check out the CCMD and ODT information page in Advana's knowledge base for more information

<https://wiki.advana.data.mil/display/SDKB/Combatant+Command+and+Operational+Data+Team+Resources>

The screenshot shows the Advana Knowledge Base interface. The header includes the Advana logo and the text 'Advana Knowledge Base'. A left sidebar contains 'SPACE SHORTCUTS' with links to User Guides, Knowledge Base Articles, Office Hours Calendar, File Lists, and FAQs. Below this is a tree view of the knowledge base structure, including 'Advana Knowledge Base', 'Advana Builder Program', 'User Guides', 'Knowledge Base Articles', 'Training Materials & Videos fo...', 'Advana Product Materials', 'Analytics as a Service' (with sub-items like Acquisition Analytics, Advanced Analytics, Cost Management Analy..., COVID-19 Analytics, Data Quality Analytics), 'Executive Analytics' (with a sub-item 'Combatant Comma...'), and 'Financial Management (...)'. The main content area shows the breadcrumb 'Dashboard / ... / Executive Analytics' and the title 'Combatant Command and Operational Data Team Resources'. Below the title, it states 'Created by Patrick Fulton, last modified yesterday at 9:23 PM'. A paragraph explains the page's purpose: 'This page is setup to provide links to Advana resources that are relevant to CCMD and ODT efforts.' A bulleted list of links is provided: 'What is the AI and Data Accelerator (ADA) Initiative?', 'What is an Operational Data Team (ODT)?', 'Reference Training Materials', 'Submitting Access Requests' (with sub-links for 'Requesting a Qlik Account', 'Requesting Developer Access', and 'Requesting a Databricks Account'), and 'Relevant Advana Population Applications'. Below the list, there are two sections: 'What is the AI and Data Accelerator (ADA) Initiative?' with a 'Problem' statement (Commanders and staff lack ready-access to automated-recurring data pipelines) and an 'Objective' statement (Give the CCMDs the data ammunition needed to facilitate information advantage); and 'What is an Operational Data Team (ODT)?'.

Want to Access the Platform?

<https://advana.data.mil/>



# PLATFORM INFORMATION





# Advana Platform

Data, Tools, and Apps are Access Controlled for Department of Defense Users

## SOURCES

## AGGREGATION

## CONSUMPTION

### Sources

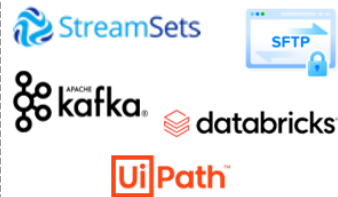
Data is acquired from numerous sources using autonomous feeds using mature processes for data acquisition enabling processing of new datasets within days

|                       |                   |                  |
|-----------------------|-------------------|------------------|
| GFEB5                 | STARS-FL          | IRAPT            |
| WAWF                  | CEFMS             | OnePay           |
| NERP                  | GFEB5             | DTIMS            |
| DWAS                  | DCPDS             | DMLS             |
| DCAS                  | GAFS-BQ           | IATS             |
| TFMS                  | Navy BUPERS       | DDS              |
| SABRS                 | PBAS              | DTS              |
| MEPRS CCR             | CAPS-W            | myInvoice        |
| EBiz                  | ADS               | BEX/BI           |
| DMDC                  | DCPS              | FAMIS CS         |
| DAI                   | NAVITAS           | DFAS WAAS        |
| iNFADS                | RPAD              | CFMS             |
| DCBS (Aero-med Evacs) | RFMIS             | SMAS             |
| SYNCADA               | O&M Exhibit       | IPAC (DSSN 3801) |
| ODS                   | NAVFAC FIS        | MSC FMS          |
| Navy SABRS            | ISR               | GCSS-A (GARMY)   |
| MOCAS                 | GSA Lease Reports | DEAMS            |
| IAPS                  | FIS MilCon        | TFRS             |
| EUD                   | DEPARC            | GAFS-R           |
| EPD                   | CRIS System       | DPAS             |
| DIFMS                 | DAAS (INTERFUND)  | CDS              |
| DDRS                  | VISTA MCVISTA     | .....            |

\*Over 250 Data Sources currently on Platform

### Ingestion

Ingest batch and streaming data from any source of data using fully automated pipelines with little to no human involvement



### Storage

Store any type of data from any source easily and cheaply. Handle structured to unstructured data regardless of structure, or format



### Data Processing

Parallel and distributed computing enables processing of terabytes of data in seconds.



### Data Governance

Manage every piece of data using data cataloging, data tagging, data lineage, data policy management, and managing data access approvals

PRIVAGERA



### Data Infrastructure and Security

Best-of-breed of Open-Source and COTS technologies providing a secure, scalable, and performant foundation for the platform.



Active Directory



PII/PHI Compliant RBAC/ABAC

### Data Platform

Fast performing and horizontally scalable compute and storage resources handling petabytes of data, hundreds of billions of records, million of files across security fabrics.



### Use

#### Data Access Layer

Access and query data through different method to enable fast analytics. Tools enable non-technical and technical users to interact with the data using rapid and streamlined tools that are part of a fully integrated experience.



#### Exploratory Environment

Explore and perform analytics on the data using a variety of industry standard languages directly from your web browser (no need to install tools). Keep version control of your code, share and collaborate with others, and run the code against a powerful distributed computing platform



#### Reporting and Business intelligence

Rapidly build dashboards and reports that enable users to perform drill-down from top to bottom using modern visuals.



Qlik Sense



# Advana Data Lifecycle

## Advana Approach

### 1. Discover Data

- Search data sets across platform
- Discover trending data
- Get recommendation based on your searches

### 2. Understand Data

- View data profile pages
- Understand uses of data
- Request access to data

### 3. Query and Analyze

- Request new Advana project workspace
- Develop data science and machine learning algorithms against data
- Run containerized models on scalable infrastructure

### 4. Visualize Results

- Visualize data and resulting models with drill-down dashboards
- Develop reports accessible to your community

## Advana Principles

- Web-based access
- Horizontally (infinitely) scalable
- Containerized enclaves
- Role based access

*Advana provides users with a seamless experience and journey across the platform from discovering the data all the way to getting insights from the data*

