EXECUTIVE ANALYTICS STARTER KIT FOR OPERATIONAL DATA TEAMS

8 SEPTEMBER 2021

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.

**DSD memo "Accelerating Data and Artificial Intelligence for the Warfighter" (21 Jun 2021)*

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 measureable 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

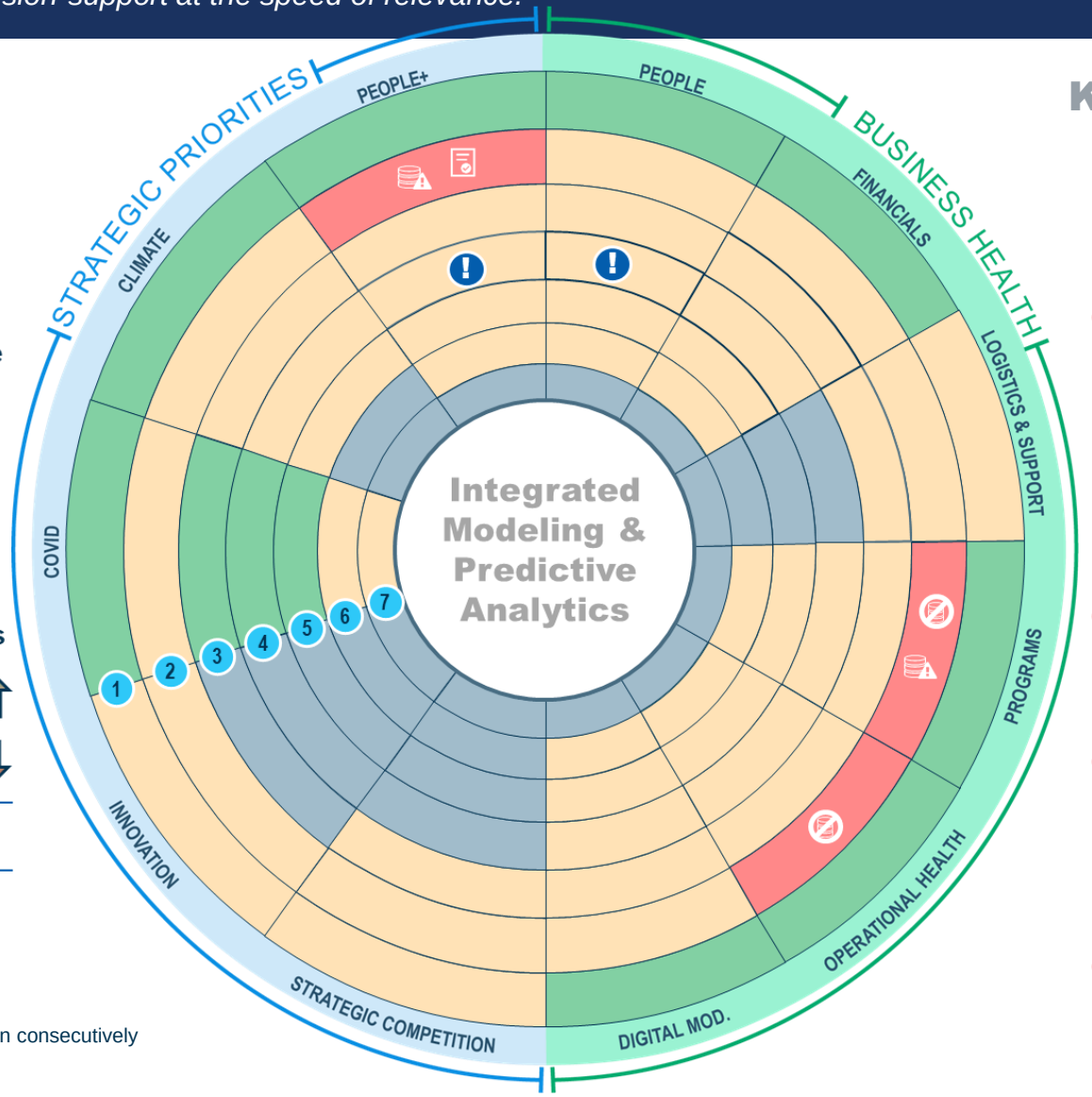
- Not Started
- In Progress
- Completed
- Blocked

New Status this Week

Expected Status Change

Status Trends

! Pending Senior Leader Engagement



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
- Timeliness
- Completeness
- Conformity
- Consistency
- Integrity
- Repeatability

Technology
- Source system can't support automation
- Data provided in proprietary format

a/o 24 June 2021

* Development stages may need to be revisited and/or run consecutively

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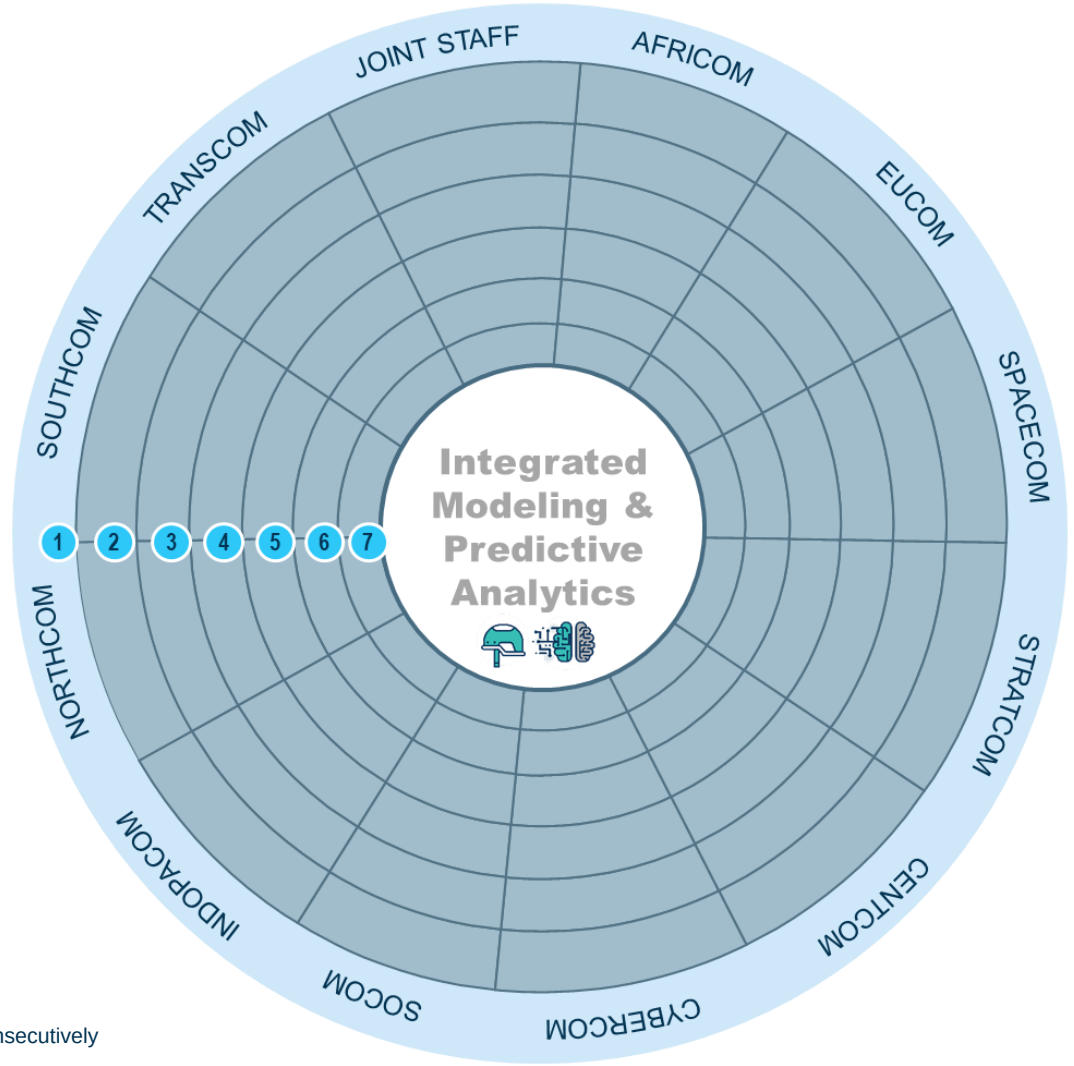

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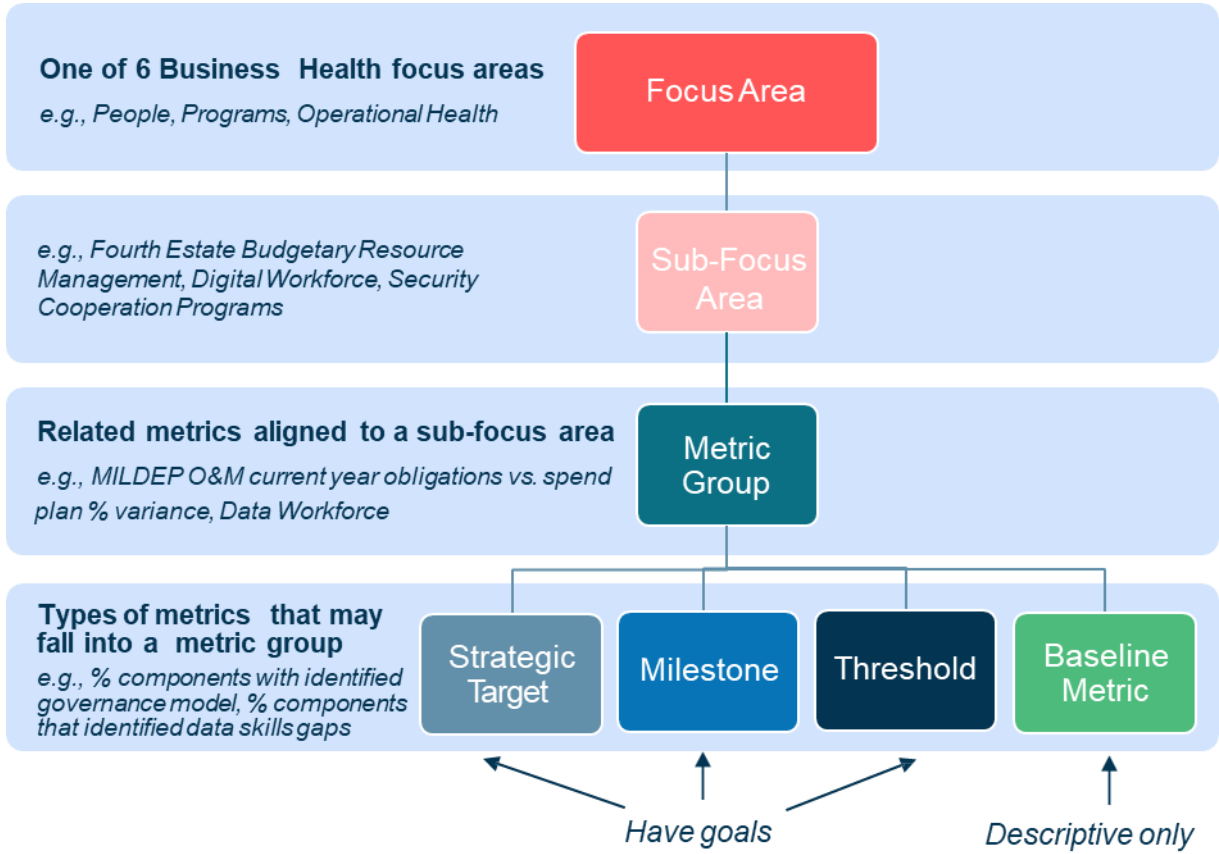
P2. Structure Analytics using the Existing Terminology

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)

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

(e.g., Digital Modernization, Programs)

Organizational Page (Tier 2)

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

Metric Pages (Tier 3)

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

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

Common Metric Template for all Tier 3 pages

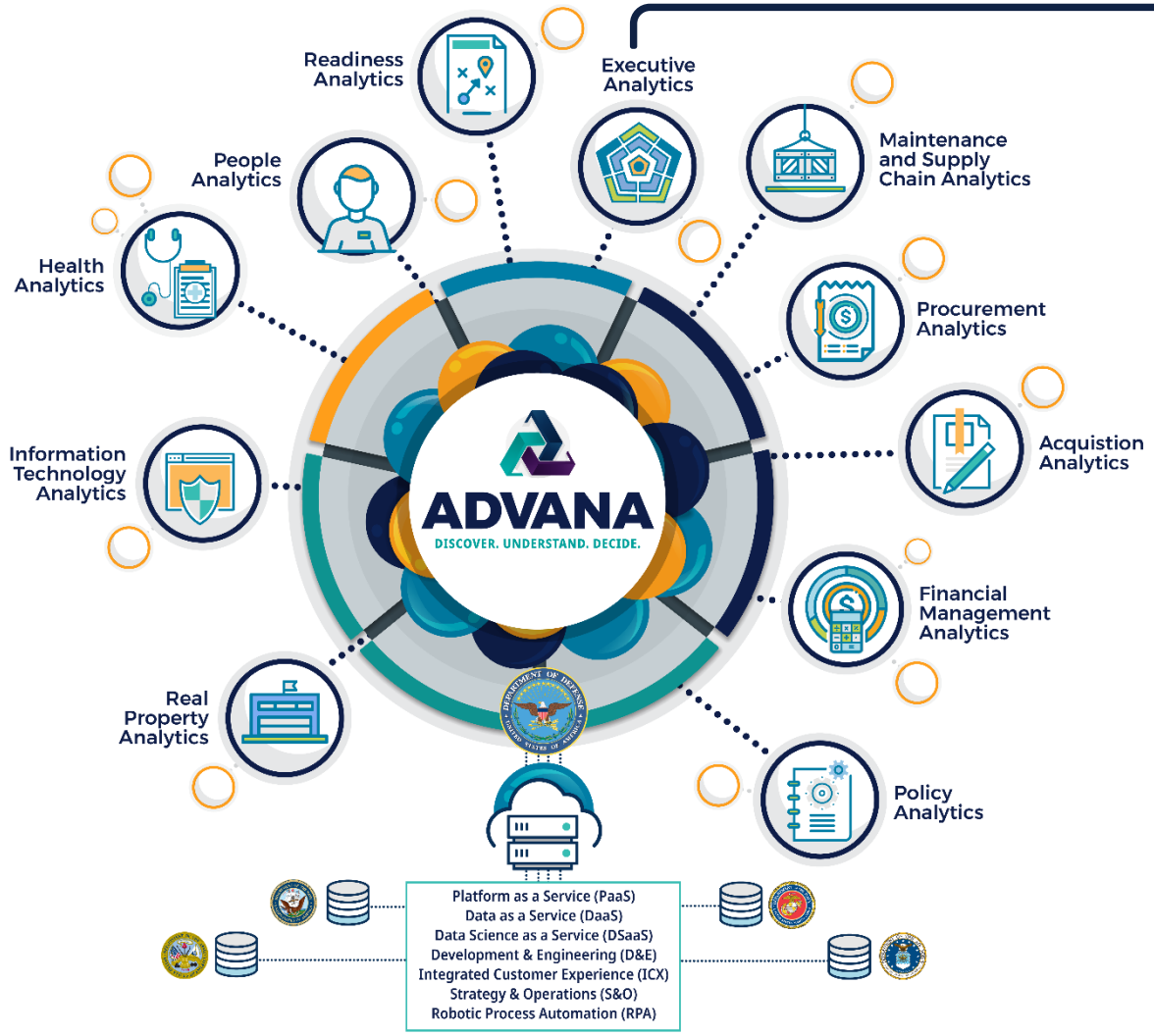
P3. Consistently Utilize the Tiered Structure in Applications

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

CCMD Activities Application

Patrick Fulton (Advana); patrick.t.fulton3.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 Data Operations

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

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

Advana Data Science as a Service

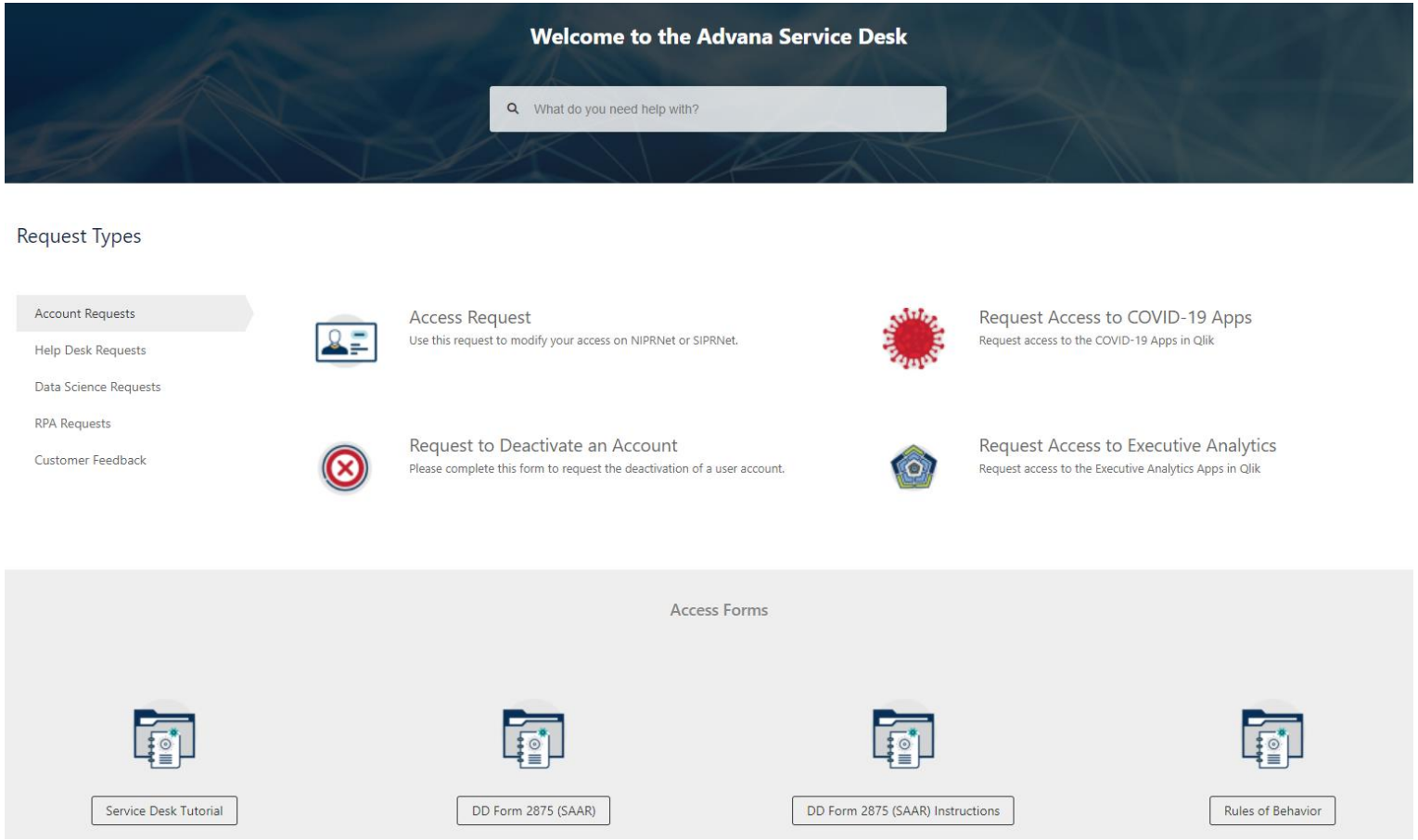
James Doswell; james.p.doswell.civ@mail.mil

Advana Platform

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

BACKUP

Advana Account Requests



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

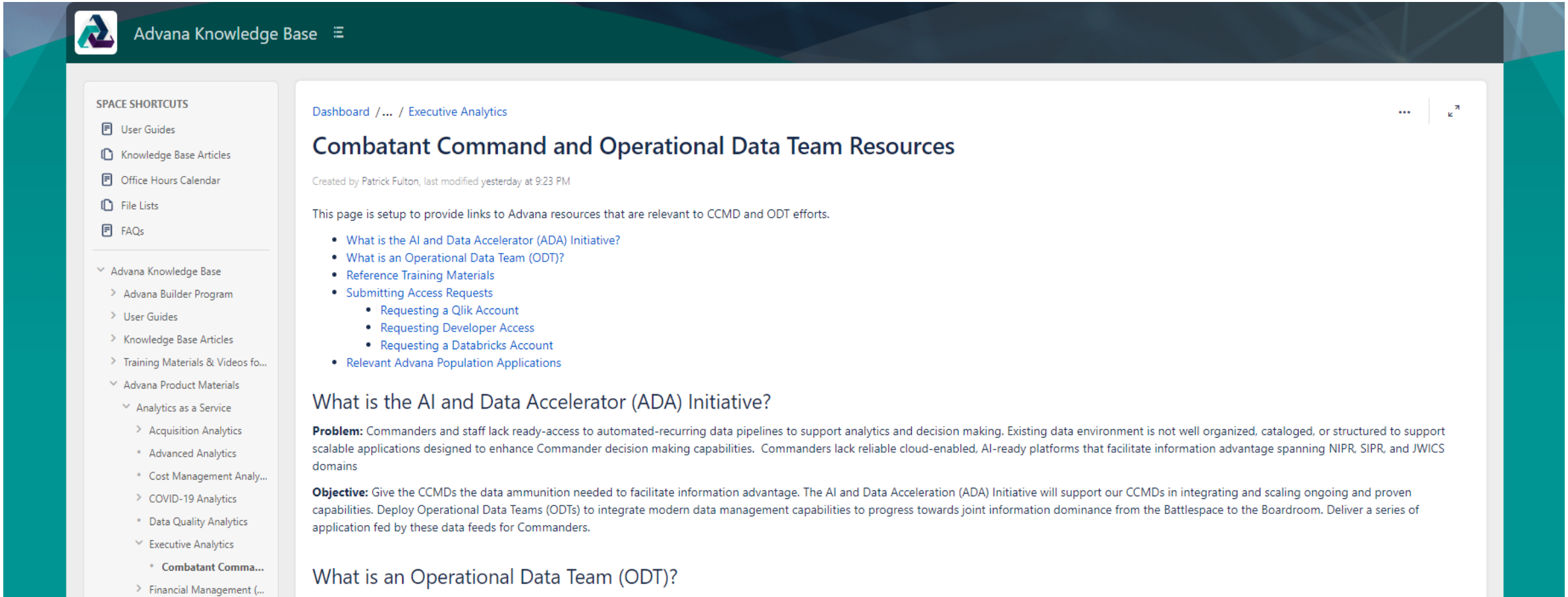
Training Materials

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



Want to Access the Platform?

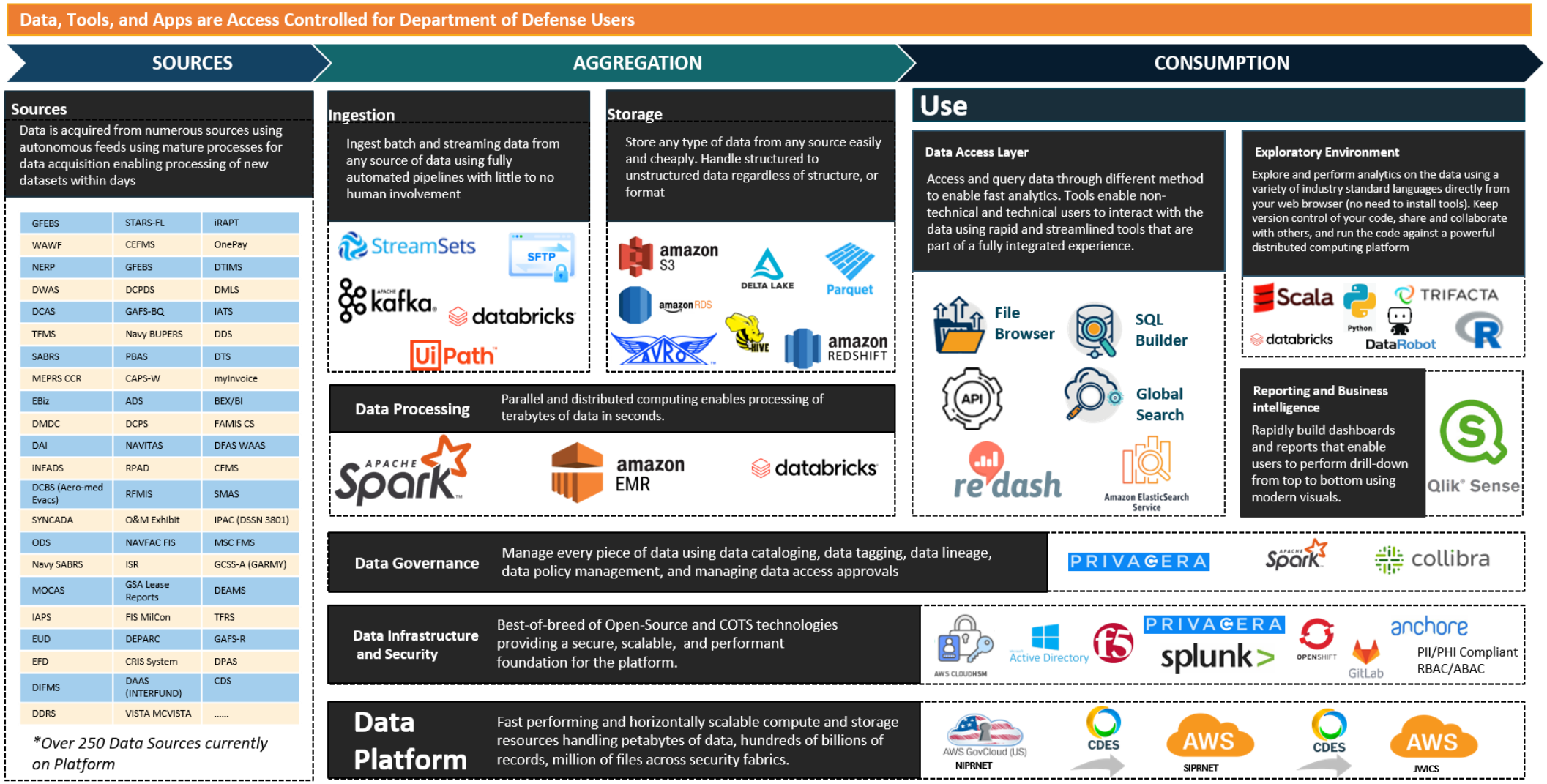
https://advana.data.mil/

PLATFORM INFORMATION

ADVANA

DISCOVER. UNDERSTAND. DECIDE.

Advana Platform



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