

# *Department of the Air Force*

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*Integrity - Service - Excellence*

## **Data Analytics with VAULT Tech Stack**



**ICEAA May 2023**



# ***Disclaimer***

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- **Any reference to contractors, companies, or any other non-government entity in this briefing is for informational purposes only and is not to be construed as an endorsement**



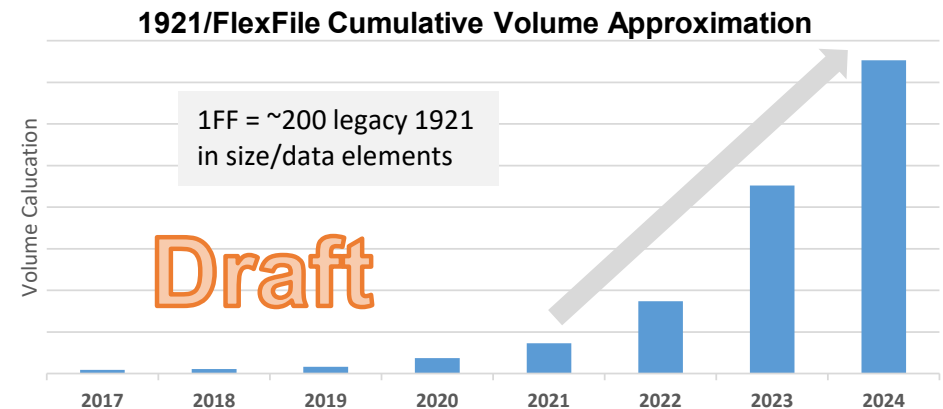
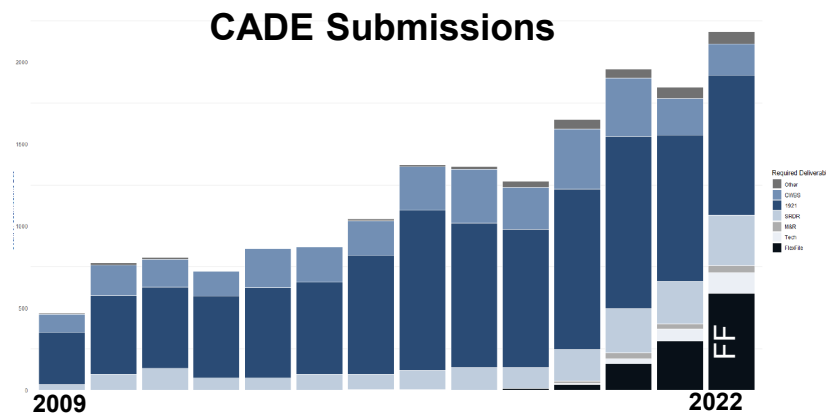
# Overview

- Largely the cost community operates on desktop-based models and toolsets today- AFCAA is undergoing a digital transformation as part of the SAF/FM Strategic plan
- AFCAA is utilizing state-of-the-art toolsets on VAULT platform in order to build data pipelines as well as analytic products such as models/dashboards/machine learning/ etc.



# Evolution of Cost Analysts' Data

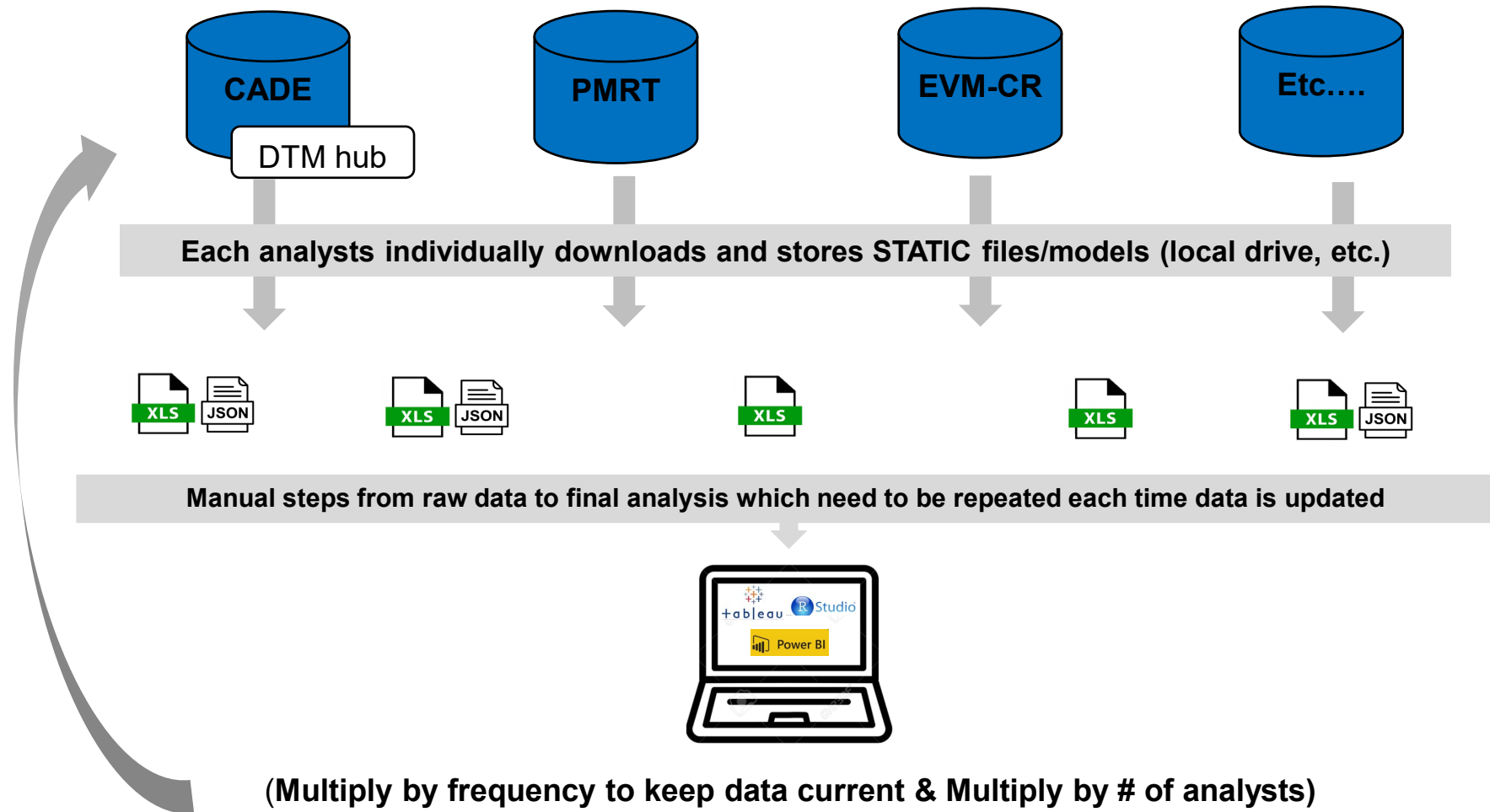
- **Cost community has significantly more data now than ever before - projected to continue to grow**
  - New reporting captures technical/ software data as well as cost
  - FlexFiles are over ~200X size of legacy cost report
  - Statutory requirement change
    - Legacy ACAT I only
    - Current >100M programs
  - Size of additional datasets (EVM, KDB, AFTOC, etc. also growing)
- **Traditional process/toolsets becoming challenging & increasingly not viable**



**Last 5 years were dedicated to improving data collection  
Next 5 years will be focused on evolving our processes/products/toolsets**

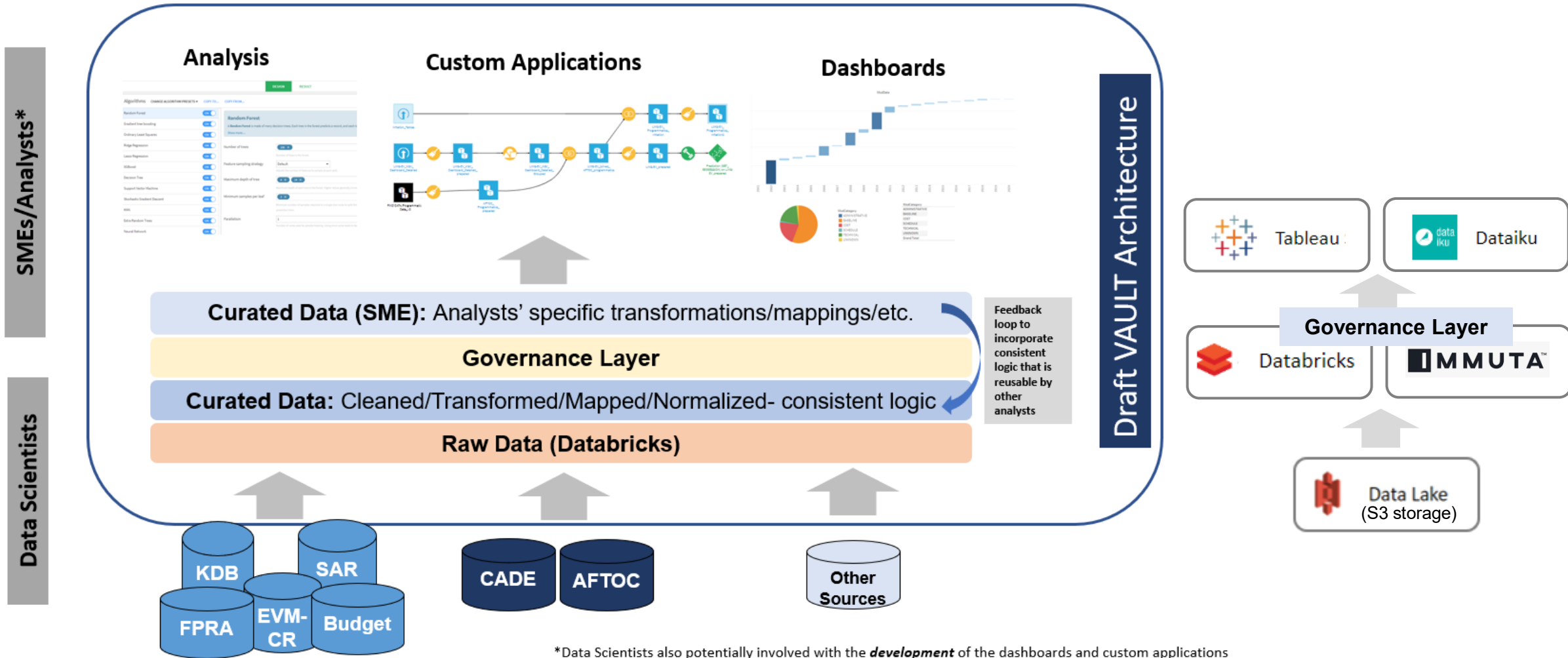


# Legacy

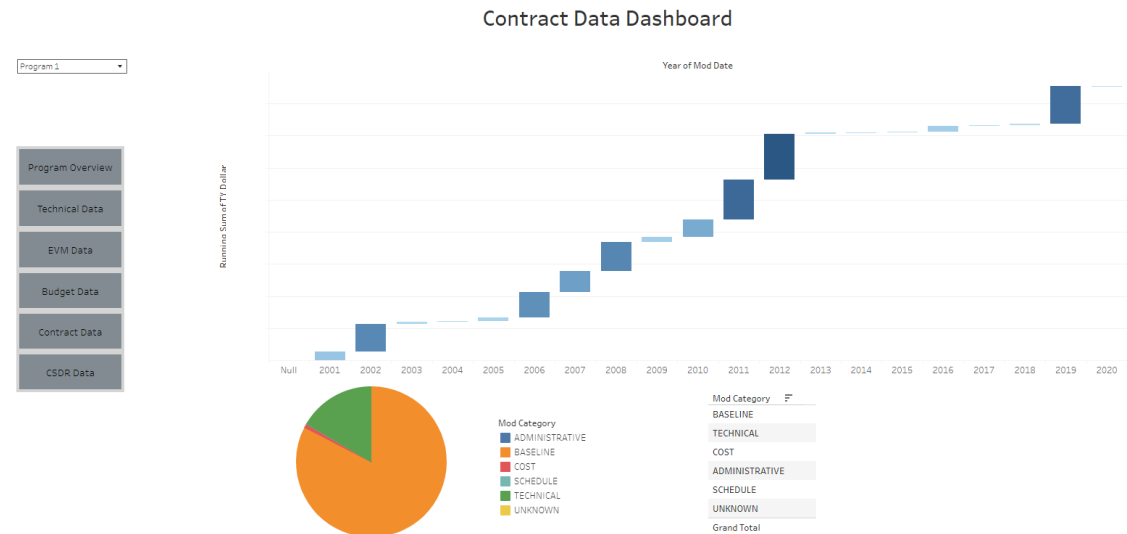
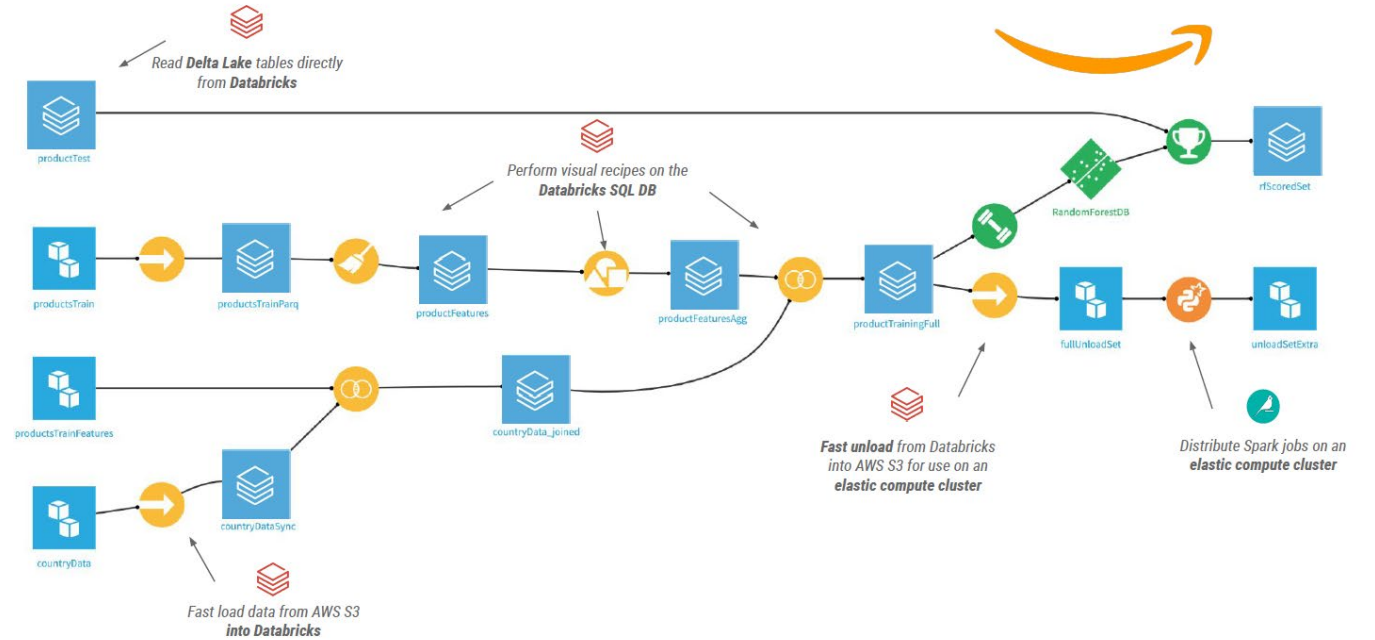
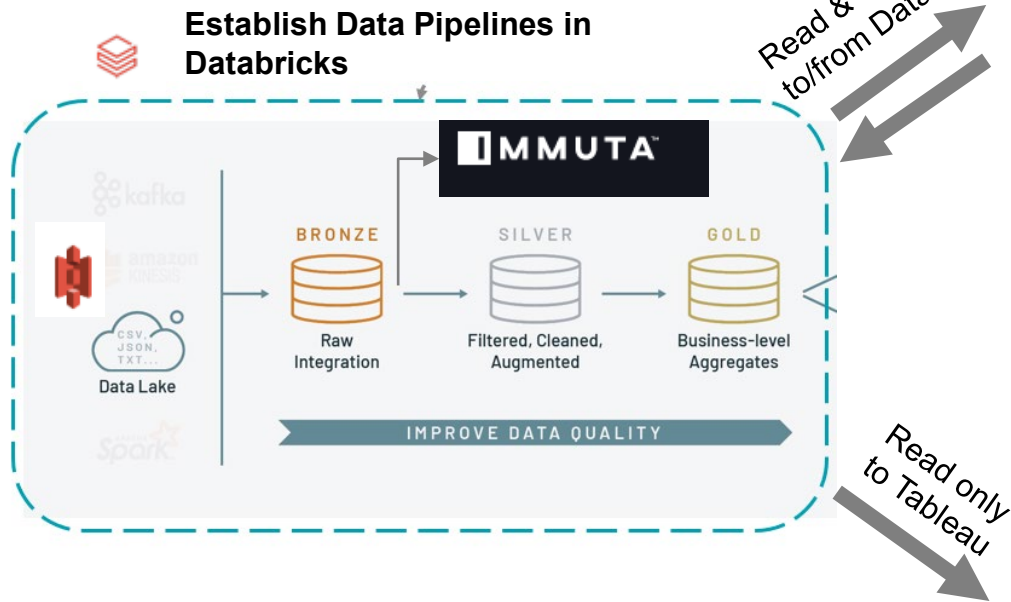




# Data Operating Model for Cost End State

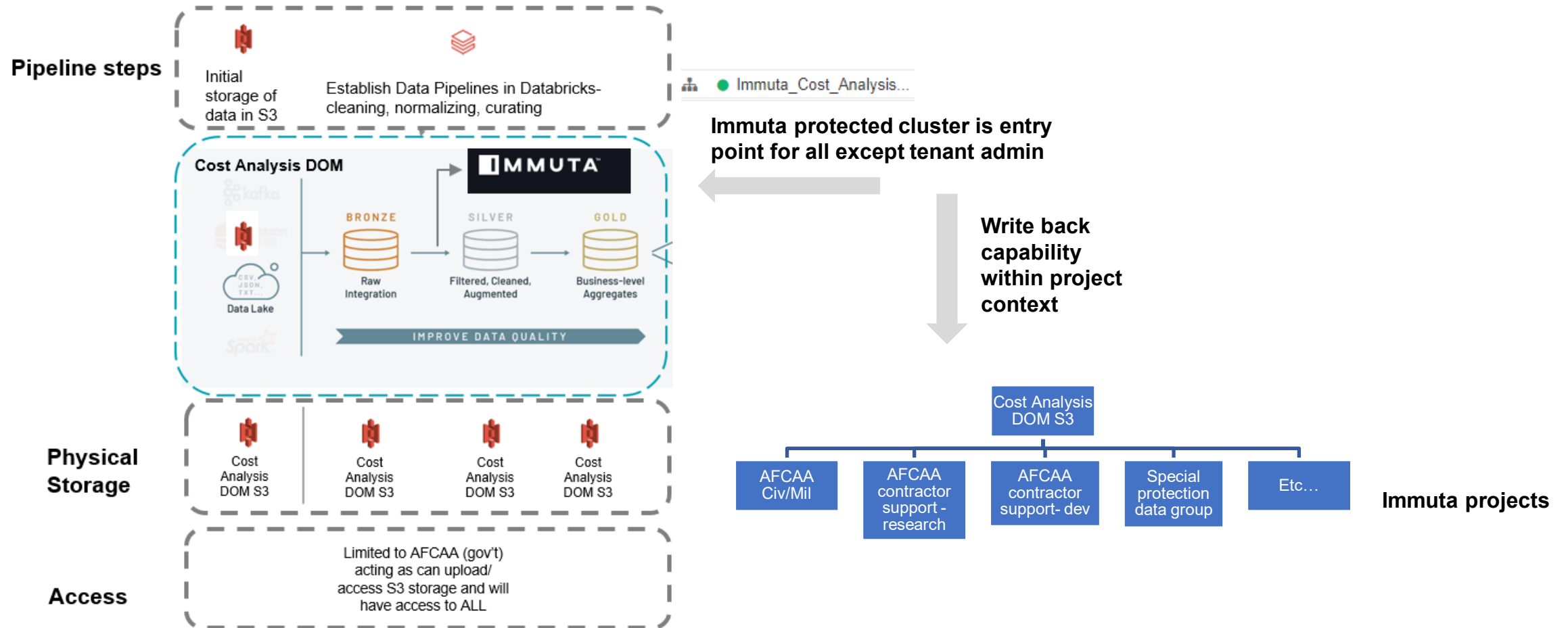


# Databricks- Dataiku-Tableau Tech stack





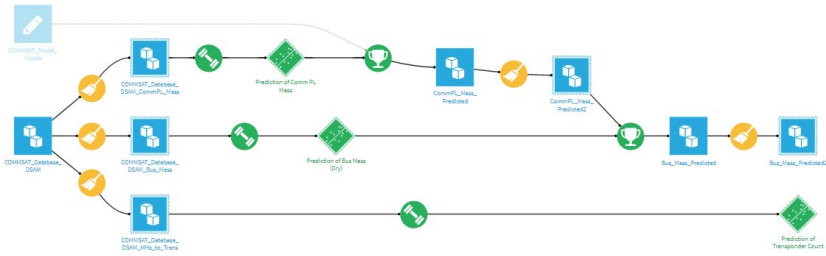
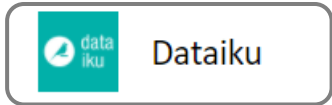
# Architecture with Immuta







# Live Demo of Data Science in VAULT



**Interactive Scoring**

ADD TO COMPARATOR    COMPARE (0)

Filter...

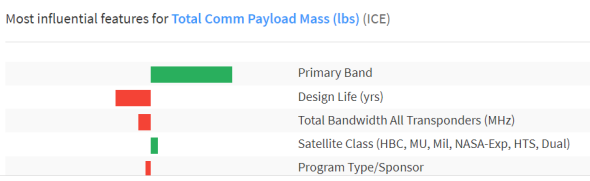
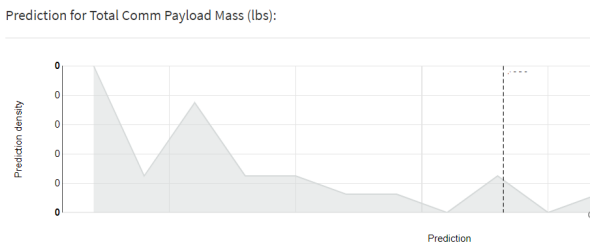
Design Life (yrs) [Slider: 1 to 16]

Satellite Class (HBC, MU, Mil, NASA-Exp, HTS, Dual) [Dropdown: Mil]

Total Bandwidth All Transponders (MHz) [Slider: 563 to 7000]

Primary Band [Dropdown: EHF]

Program Type/Sponsor [Dropdown: Commercial]



Program Overview Dashboard

Program: AEHF

- Program Overview
- Technical Data
- EVM Data
- Budget Data
- Contract Data
- CSDR Data
- SDR Data

Advanced Extremely High Frequency Satellite (AEHF) is a joint service satellite communications system that provides global, survivable, secure, protected, and jam-resistant communications for high priority military ground, sea and air assets. The system consists of four operational satellites in Geosynchronous Earth Orbit that provide 10 times the capacity of the 1990s-era Military Strategic and Tactical Relay Block II satellites. The system provides continuous 24-hour Extremely High Frequency Extended Data Rate coverage between 65 degrees north and 65 degrees south latitude. AEHF allows the National Security Council and Combatant Commanders to control their tactical and strategic forces at all levels of conflict up to and including general nuclear war, and it supports the attainment of information superiority.

The AEHF operational system is composed of three segments: space, terminals, and mission control. The space segment consists of a cross-linked constellation of satellites to provide worldwide coverage. The terminal segment includes fixed and mobile ground terminals, ship and submarine terminals, and airborne terminals. The mission control segment controls satellites on orbit, monitors satellite health, and provides communication system planning and monitoring. This segment is also survivable, with both fixed and mobile control stations.



Contract Data Dashboard

ModDate

ModCategory

- ADMINISTRATIVE
- BASISLINE
- COST
- SCHEDULE
- TECHNICAL
- UNKNOWN





# *Practical Steps*

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- **What can you do to embrace data science processes, toolsets, etc. as a part of your day-to-day cost analysis?**
  - **What can you do as an ORGANIZATION?**
  - **What can you do as a COMPANY?**
  - **What can you do as an INDIVIDUAL?**