

# Air Force Materiel Command

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## Aviation Support Equipment (AvSE) Fleet Health Management (FHM)



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HQ AFMC/A4/10-EN  
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Version 2

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# *Classification*

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**“The classification of the brief is UNCLASSIFIED and the discussion can go up to UNCLASSIFIED”**



# *Purpose*

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***To present the history and status of AvSE Fleet Health Management efforts leveraging the DAF Data Fabric and Advana/BLADE***

AvSE – Aviation Support Equipment, DAF – Department of the Air Force, BLADE – Basing and Logistics Analytic Data Environment

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# Overview

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- **AvSE Profiling Metrics Automation**
- **AvSE Fleet Health Management Enterprise Metrics**
  - **Future Directions**
  - **Lessons Learned**



# *AvSE MIS Standup Profiling Metrics Automation*

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- **Worldwide AvSE MIS transitioning into DPAS**
  - **First step is to profile the asset (populate DPAS Asset record w/ serial number, etc.)**
- **Summer 2022 – HQ AFMC/A4MY downloading DPAS data, loading in MS Access, and producing metrics in MS Excel**
  - **Requested assistance from A4/10-EN to improve/automate (~ Aug 2022)**
- **A4/10-EN verified DPAS data present in Advana/BLADE, refreshed every 4 hours**
  - **Established connection from AF CDAO VAULT to Advana/BLADE**
  - **Tableau Prep Builder – join dozens of tables and output viz-ready data**
    - **Scheduled twice daily refresh**
  - **Tableau – create dashboards to show metrics and identify data issues**
    - **Subscriptions emailed PDF output to A4MY daily to post on SharePoint**

MIS – Maintenance Information System, DPAS – Defense Property Accountability System, LIMS-EV – Logistics, Installations, & Mission Support Enterprise View,, CDAO – Chief Data & Artificial Intelligence Office

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# Tableau Prep Builder Flow



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# Tableau Dashboard



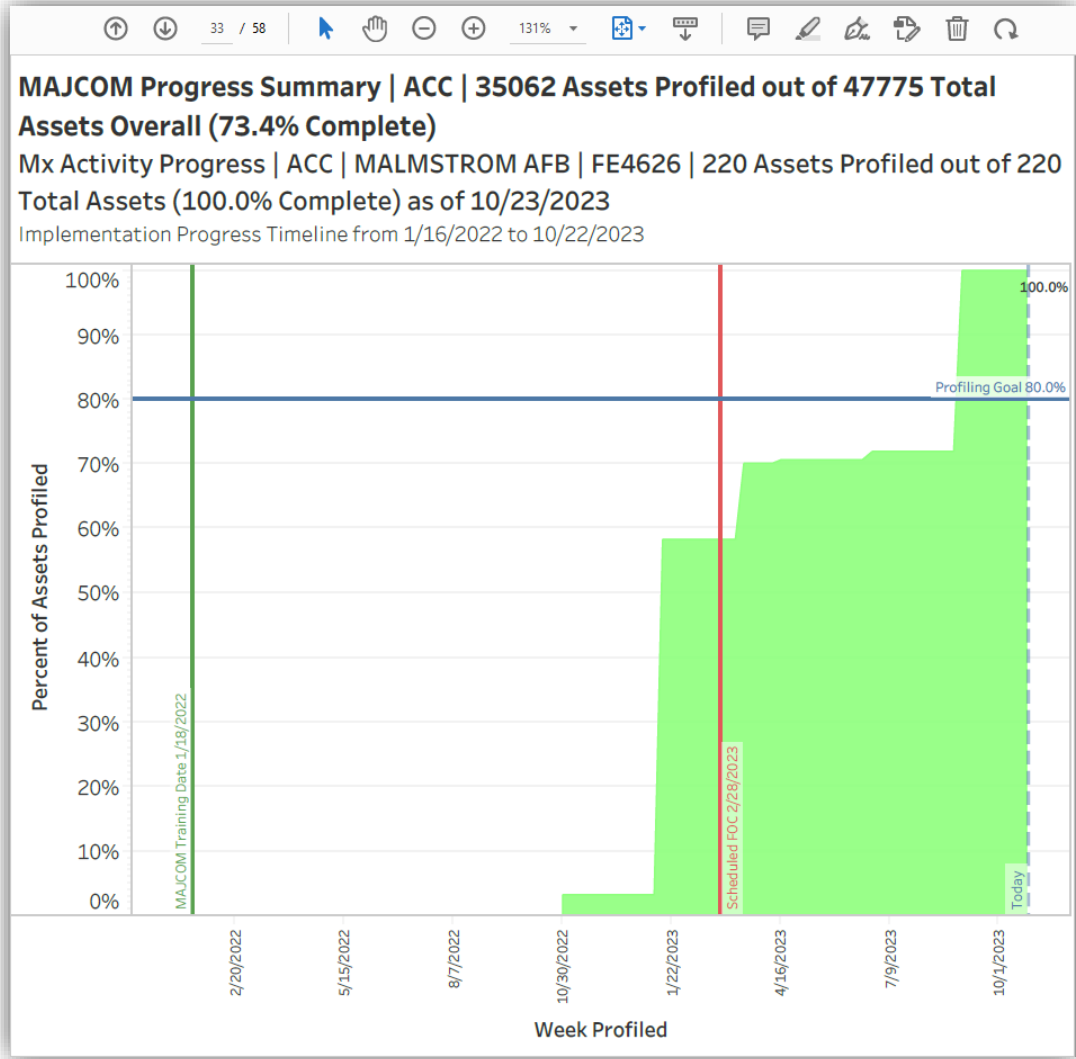
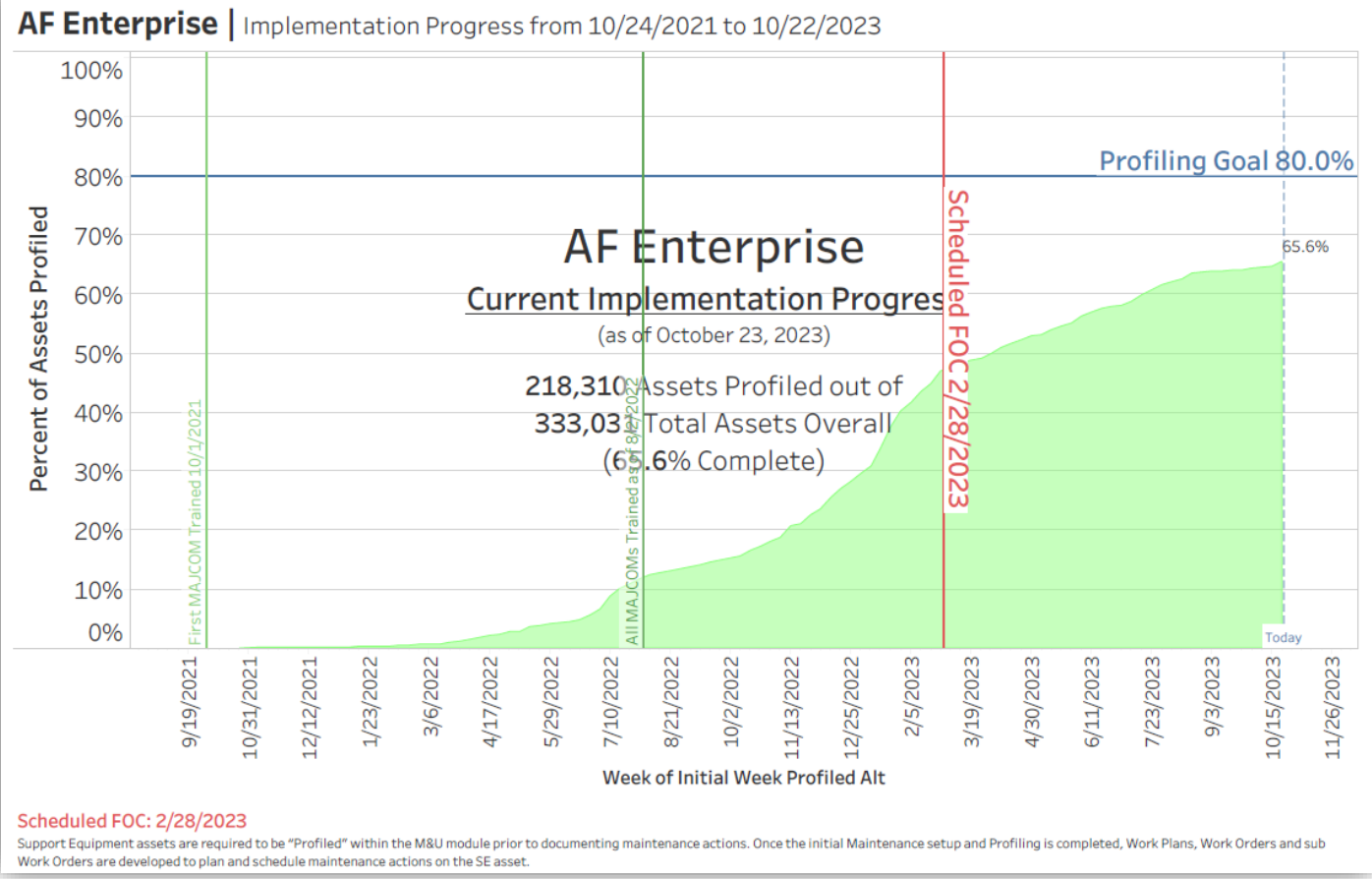
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# Tableau PDF output subscription examples



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# *AvSE MIS Standup Profiling Metrics Automation*

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## ■ Challenges

- DPAS Data Dictionary incomplete
- VAULT Tableau Licensing
- DPAS Data re-baseline(s) in Advana

## ■ Successes

- Combined data from multiple sources available in Advana (DPAS, TRDM, IMCS)
- DAF Data Fabric “Big Six” platforms working together (BLADE → VAULT)

TRDM – TRANSCOM Reference Data Management, IMCS – Item Management Control System

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# ***AvSE Fleet Health Management (FHM)***

## ***Enterprise Metrics***

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- **Jan 2023 – BLADE informed A4MY that Phase III Requirements would likely slip right**
  - **Start: ~~May 2023~~ October 2023 or later**
  - **Option: AvSE Enterprise View dashboard constructed by Self-Service “Builder”**
    - **LIMS-EV views migrated to BLADE use Qlik**
  - **A4MY requested A4/10-EN assistance as a Builder**
- **Tableau flow logic converted into equivalent Databricks R Notebook in BLADE**
  - **Output tables now available to any visualization tool (Tableau, Qlik, PowerBI, etc.)**
- **Views built using standard Qlik functionality for filtering and output**
- **Initial app published in Sep 2023**
  - **Refreshed every four hours**



# ***AvSE Fleet Health Management (FHM)***

## ***Enterprise Metrics***

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### **■ Challenges**

- DPAS Data Dictionary incomplete**
  - Incredibly inefficient process required to:**
    - Locate missing data fields (reverse-engineering)**
    - Request DPAS adds them to the Advana data feed**
  - BLADE Self-Service Builder publishing process undefined**
  - Tableau-to-Qlik learning curve**
    - Best practices, data model management**

### **■ Successes**



- First organic Builder-created app published in BLADE**
  - Accessible to BLADE consumers AF-wide with near real-time DPAS data**



# AvSE Enterprise View screenshots

Overview AvSE MIS

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 <p><b>BLADE</b> CUTTING EDGE ANALYTICS</p>	<p><b>APPLICATION OVERVIEW</b></p> <p>Aviation Support Equipment (AvSE) dashboards</p> <p style="text-align: center; background-color: #009682; color: white; padding: 5px;">VIEW</p>	<p><b>GLOSSARY</b></p> <p>Terms and Descriptions</p> <p style="text-align: center; background-color: #009682; color: white; padding: 5px;">VIEW</p>	<p><b>DATA SOURCES</b></p> <p>Data Reload Timestamp 10/25/2023 2:04:52 PM</p> <p style="text-align: center; background-color: #009682; color: white; padding: 5px;">VIEW</p>	<p><b>RELEASE NOTES</b></p> <p>Last App update: 10/19/2023</p> <p style="text-align: center; background-color: #009682; color: white; padding: 5px;">VIEW</p>	
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**AvSE Enterprise View - Application Overview**

The Aviation Support Equipment (AvSE) app provides an Enterprise View into the AvSE Maintenance Information System (MIS) standup in Defense Property Accountability System (DPAS). The app brings together data from DPAS and other systems to show Status and Availability metrics down to the individual Asset or Work Order level. Contact DPAS M&U Support <[avse.mis.support@avlog.us](mailto:avse.mis.support@avlog.us)> with any questions.

**Asset Dashboard**  
Review overall Asset information. See breakdowns by status and asset geo locations on the map. Filter by any field in the view or in the filters at the top of the page.

**Work Order Dashboard**  
Review Open, Pending Close, and Closed Work Order and Sub Work Order details on Assets. Filter by any Asset, Work Order, or Sub Work Order column in the view or use the filters at the top of the page.



# AvSE Enterprise View screenshots

Asset Dashboard
**AvSE MIS**

Data Reload Timestamp: 10/25/2023 2:04:52 PM

MAJCOM:  Status:  Status Detail:  Stock Number:  Serial #:  Secondary Serial #:  ...

Number of A...: 335.7k

**FMC Assets: 102.4k**

**NMC Assets: 4.15k**

**Status Unkn...: 229.1k**

FMC	8111k	102.36k
NMC	4.15k	
Status Unknown	108.76k	120.39k

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**Asset Table**

Open WO	Closed WO	Total WO	Total Assets in View	Mx Activity Name	Equipm... Pool Name	Asset ID	Status Detail	Item Descripti...	Stock Number	Serial #	Second... Serial #	Mainten... Manage... Code	Equipm... Speciali... Code	IMS Design... Code	Custod... Number
54519	189...	243...	335625												
0	0	0	1	PEORIA	NMU PEORIA	0002	Unknown (NMU)	SHIPPING AND STORAGE CONTAINER,M...	814501118...	BULK2ITM00...	-	NMU - No Maintenance or Utilization	VR	V3P	121MK
0	1	1	1	MIDDLE RIVER MD	175 MXS AGE	12T1	FMC	JACK_AIRCRAFT LANDING GEAR	173000544...	6191G6V12T1	-	MNT - Maintenance only	PS	VLC	123AG
0	3	3	1	MIDDLE RIVER MD	175 MXS AGE	12T2	FMC	JACK_AIRCRAFT LANDING GEAR	173000544...	6191G6V12T2	-	MNT - Maintenance only	PS	VLC	123AG
0	2	2	1	MIDDLE RIVER MD	175 MXS AGE	12T3	FMC	JACK_AIRCRAFT LANDING GEAR	173000544...	6191G6V12T3	-	MNT - Maintenance only	PS	VLC	123AG
0	1	1	1	MIDDLE RIVER MD	175 MXS AGE	12T4	FMC	JACK_AIRCRAFT LANDING GEAR	173000544...	11716-13	-	MNT - Maintenance only	PS	VLC	123AG
0	0	0	1	MIDDLE RIVER MD	175 MXS AGE	15T1	FMC	JACK_AIRCRAFT LANDING GEAR	173001084...	6191G6Z15T1	-	MNT - Maintenance only	PS	VLC	123AG
0	2	2	1	MIDDLE RIVER MD	175 MXS AGE	15T2	FMC	JACK_AIRCRAFT LANDING GEAR	173001084...	6191G6Z15T2	-	MNT - Maintenance only	PS	VLC	123AG
0	3	3	1	MIDDLE RIVER MD	175 MXS AGE	15T3	FMC	JACK_AIRCRAFT LANDING GEAR	173001084...	6191G6Z15T7	-	MNT - Maintenance	PS	VLC	123AG



# AvSE Enterprise View screenshots

Insight Advisor | item\_desc AIR CONDITIONER | MAJCOM AFMC | Bookmarks | Sheets | Duplicate

## Work Order Dashboard

Data Reload Timestamp: 10/25/2023 2:04:52 PM

Asset ID | Status Detail | Serial # | MAJCOM | Equipment Pool Name | Mx Activity Name

### Asset Table

Open WO	Closed WO	Total WO	Total Assets in View	Mx Activity Name	Equipm... Pool Name	Asset ID	Status Detail	Item Descripti...	Stock Number	Serial #	Second... Serial #	Mainten... Manage... Code	Equipm... Special... Code	IMS Design... Code	Custod... Number
86	556	642	1713												
0	0	0	1	MALMSTROM AFB	SUPPORT	990501	Unknown (NMU)	AIR CONDITIONER	412001449...	040223	-	NMU - No Maintenance or Utilization	OH	VBC	897IO
0	0	0	1	PAFB CO	-	ITM000349...	Unknown (NPD)	AIR CONDITIONER	412001543...	1116006	-	NPD - Not Profiled	OH	VBC	170AG
0	0	0	1	PAFB CO	-	ITM000349...	Unknown	AIR	412001543...	1116007	-	NPD - Not	OH	VBC	170AG

### Work Order Table

Asset ID	WO Number	Number of Sub IDs	Sum of Labor Hours	Status Code	NMC Status	Reason Code	Close Date
<b>Totals</b>		<b>889</b>	<b>1977.75</b>				
ITM003171...	202310240...	2	0	O - Open	-	PMNT	-
ITM003171...	202310240...	1	0	O - Open	-	PMNT	-
ITM003141...	202310230...	1	0	O - Open	-	MINM	-
ITM003141...	202310230...	1	0	O - Open	-	MINM	-
ITM003141...	202310230...	1	0	O - Open	-	MINM	-
ITM003171...	202310230...	1	0	O - Open	-	PMNT	-
ITM003171...	202310230...	1	0	O - Open	-	PMNT	-
ITM003171...	202310220...	1	0	O - Open	-	PMNT	-
ITM003171...	202310190...	1	0	O - Open	-	MINM	-
ITM003171...	202310190...	1	0.5	C - Closed	-	OTHR	2023-10-20
ITM003141...	202310180...	1	0	O - Open	-	PMNT	-
ITM003141...	202310180...	1	0	O - Open	-	PMNT	-
ITM003141...	202310180...	2	0	O - Open	-	PMNT	-

### Sub Work Order Details Table

WO Number-SubID	Asset ID	Sum of Labor Hours	Team ID	Team Description	WO Description	Work Plan Type Code
<b>Totals</b>		<b>1977.75</b>				
-1	ITM003171...	4	AGEM	AGE FLIGHT OFFICE	2 YEAR SPECIAL INSPECTIONS	PREV
-1	ITM003171...	40	ARINS	AGE REPAIR & INSPECTION	2 YEAR SPECIAL INSPECTIONS	PREV
-1	ITM003171...	0	AGEM	AGE FLIGHT OFFICE	ANNUAL INSPECTION	PREV
-2	ITM003171...	0	-	-	EGLIN AFB, FL CLEAR RED X, PRIMARY AFSC	OTHR
-1	ITM003171...	0	ARINS	AGE REPAIR & INSPECTION	6 MONTH SPECIAL INSPECTION	PREV
-2	ITM003171...	1	ARINS	AGE REPAIR & INSPECTION	EGLIN AFB, FL CLEAR RED X, PRIMARY AFSC	INSP
-1	ITM003171...	0	ARINS	AGE REPAIR & INSPECTION	90 DAY WASH AND	PREV



**BLADE**  
CUTTING EDGE ANALYTICS





# Questions

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