Air Force Total Ownership Cost Decision Support System (AFTOC)

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Team Leader
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AFTOC is designed to significantly reduce the need for analysts and DoD staff to acquire, normalize, aggregate, allocate, and organize financial and logistic data on AF systems and infrastructure and to provide analytical capability that would otherwise not exist.
The Eight “tions” of AFTOC

- Transformation
- Aggravation
- Integration
- Aggregation
- Derivation
- Allocation
- Presentation
- Distribution
Basic Process

Simplified Flow Diagram

Outside World

Source Data

Import

Normalize

Process

Distribute

AFTOC

Transformation

Aggregation
Integration
Aggregation
Derivation
Allocation

Presentation
Distribution
Each data feed has its own unique structure that must be “normalized” before it can be used
- Text numbers turned into real numbers
- Codes deciphered
- Translate labels into common terminology
- Standardize naming conventions, dates, places
# Transformation of Data

**Supply Data as Received**

48522004182015587Y2840014484901NZJ707JS417700850000001RME721060XA
E231CXD20156898890644DOR1PU78210057CTM700007720352R121C0

**Posted to the Logistics Distribution Table (a subset of the fields available)**

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<th>Data_Source</th>
<th>Data_Type</th>
<th>SRAN</th>
<th>Org</th>
<th>OBAN</th>
<th>Command_CAIG</th>
<th>RCCC</th>
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</thead>
<tbody>
<tr>
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<td>MSD</td>
<td>4852</td>
<td>707</td>
<td>7821</td>
<td>ACC</td>
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<table>
<thead>
<tr>
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<th>DocNo</th>
<th>SRD</th>
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<tbody>
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<td>720</td>
<td>J707JS41770085</td>
<td>XAE</td>
<td>F100PW229B</td>
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</table>

<table>
<thead>
<tr>
<th>FSC</th>
<th>NIIN</th>
<th>MMAC</th>
<th>Noun</th>
<th>TransSerialNo</th>
<th>TransDate</th>
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<tbody>
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<td>2840</td>
<td>014484901 NZ</td>
<td>HOT SECTION MODULE, AIRCRAFT</td>
<td>2004182</td>
<td>01558</td>
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<table>
<thead>
<tr>
<th></th>
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<tbody>
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<td>$1,734,000.00</td>
<td>$2,444,704.50</td>
<td>$875,715.60</td>
<td>$894,845.24</td>
<td>$1,568,988.90</td>
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<table>
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<tr>
<th>MD_CAIG</th>
<th>Engine_TMS</th>
<th>Output_TRIC</th>
<th>Input_TRIC</th>
<th>TTPC</th>
<th>Phrase</th>
<th>Net_Qty</th>
<th>Net_Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-16C/D</td>
<td>F100PW229B</td>
<td>1PU</td>
<td>DOR</td>
<td>7Y</td>
<td>CHARGE @ XCH</td>
<td>1</td>
<td>$1,568,988.90</td>
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</table>

<table>
<thead>
<tr>
<th>Shop_Code</th>
<th>Work_Unit_Code</th>
<th>Work_Unit_Code_Description</th>
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<tbody>
<tr>
<td>JS</td>
<td>23</td>
<td>Turbojet/Turbofan Propulsion System</td>
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</tbody>
</table>
Aggravation with Data

- Data is often incomplete or in error
  - Processes are in place to
    - Identify what’s missing or wrong
      - No data where some is expected
      - Wrong kind of data
      - Applying statistics
      - Checking outliers
    - Make things right
      - Filling in the holes
        - Related transactions
        - Use other data (e.g., basing) to narrow possibilities
        - User input
  - Changing data sources
  - Changing Air Force structure
Integration of Data

- AFTOC ties data from different data sources together
  - Data warehouse architecture
  - Cross-reference tables
  - Business rules
  - Assign cost to systems or places
  - Tables
  - Cubes
Derivation of Data

- AFTOC added value = derived data

- Functional knowledge + Multiple data elements
  + Cross reference tables = Derived data

- Example 1:
  - MAJCOM+UNIT+BASE+PEC+SHOP CODE=AIRCRAFT TYPE

- Example 2:
  - supply transaction record incomplete, fill in based upon historical transaction records
Aggregation of Data

Using multiple disparate data elements to derive new information
No matter how hard we try, some allocation of costs is needed
- Differentiating between F-15C and F-15D at a base
- Assigning costs to partial Contractor Logistics Supported aircraft in a shared Program Element Code

Using measures as “ allocators”
- Usage rate, flying hours
- Location
- Inventory
- Fuel usage
- Historical statistics
Predefined Formats
- Static Web Pages
- Multi-Metric Briefing Book

User Defined Formats
- COGNOS Portal
- Drill down

OLAP – On Line Analytical Processing
- Queries of multi-dimensional data cubes
- Deep drill down

Tools
- Logistics Distribution Tool
- Cost Per Flying Hour Tool
AFTOC is web based information
Access restricted to authorized persons
- Government employees
- Contractors with Government sponsorship
- On line registration
- [https://AFTOC.hill.af.mil](https://AFTOC.hill.af.mil)

Help Desk
- User Requests
- User Support
The Magic Has Happened

The data is now information!