Cargo Helicopters Parts Marking Program

Chris Sautter

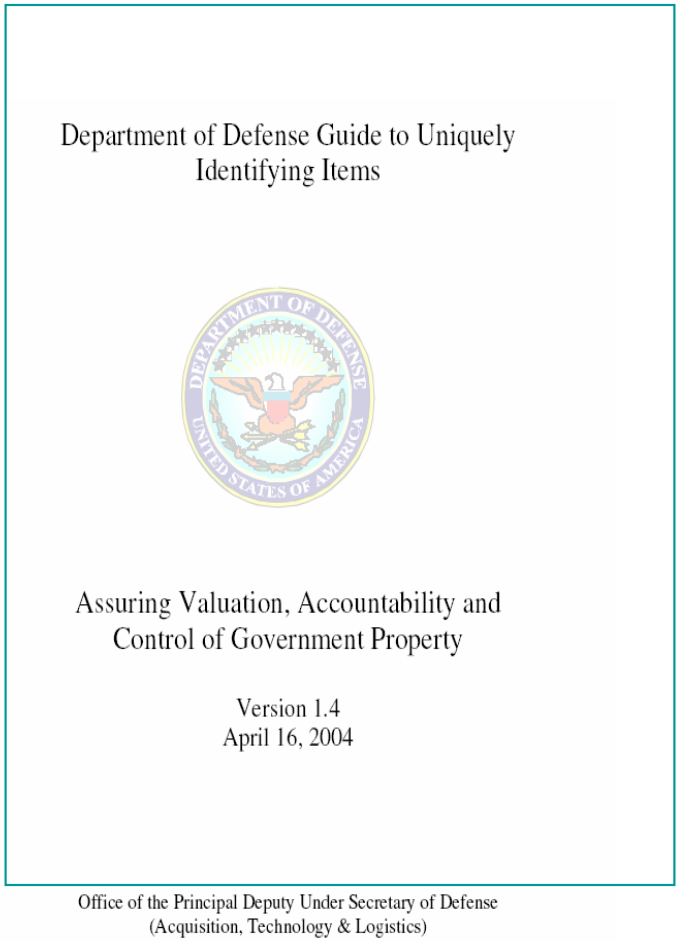
University of Alabama in Huntsville

256 824 6147

chris.sautter@uah.edu

Why Are We Marking?

- **Compliance with DoD UID policy**
- **Enable SFL (Soldier Focused Logistics)**
  - Asset Management
  - Maintenance Management
  - Configuration Management
  - Fleet View


Department of Defense Guide to Uniquely Identifying Items

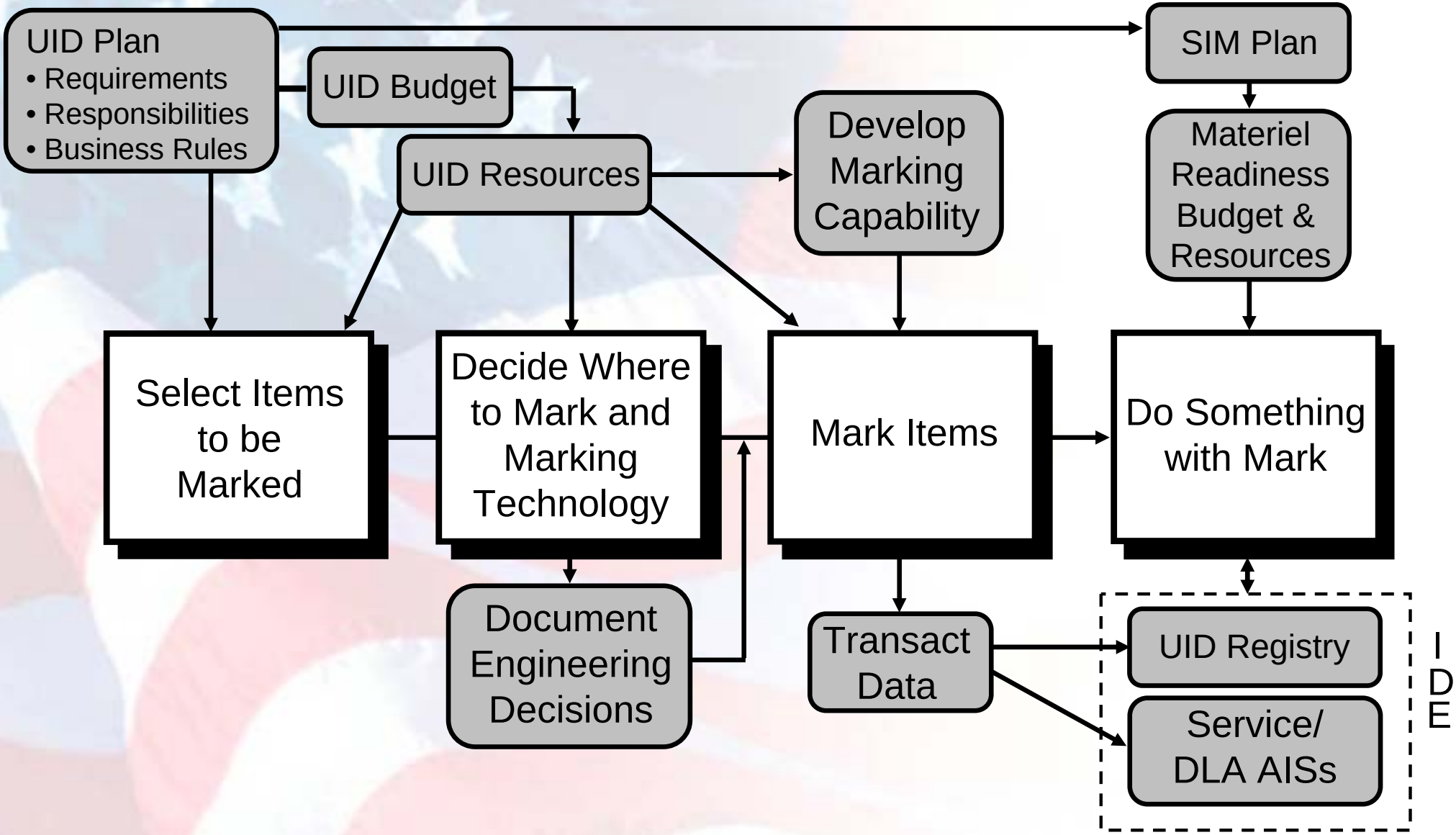
Assuring Valuation, Accountability and Control of Government Property

Version 1.4
April 16, 2004

Office of the Principal Deputy Under Secretary of Defense
(Acquisition, Technology & Logistics)

PMO embarked on UID/AIT initiative independent of and in advance of DoD Policy Publication

Roles and Responsibilities - Shared Expectations are Important



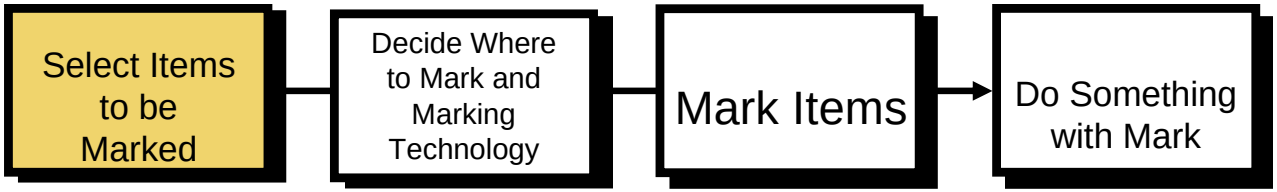
How does a UID program fit in?

- CH-47 Vision started with the AIS.
  - Leverage MMS and Info Center Architecture.
- UID enables “error free” data within AIS.
- Foundation piece toward Total Asset Visibility.
- Tie field, depot and OEM together.

Where did we start?

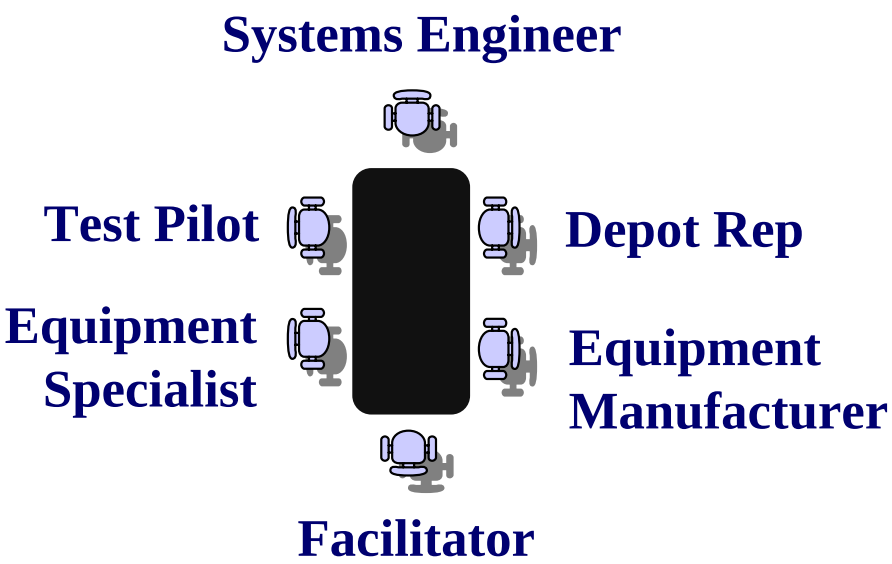
- Multifunctional Team (RCM Like)
  - PM
  - Depot
  - OEM
  - Users
- DoD Guidance
- DA Form 2410 (Army SNT)
- RECAP
- CSI

- ***TOTAL LIST: ~1100***



Multi-functional Team

- **Parts marking solutions are identified using Reliability Centered Maintenance (RCM) techniques**
  - Systematic review of all failure modes, failure effects, and consequences of each marking opportunity.

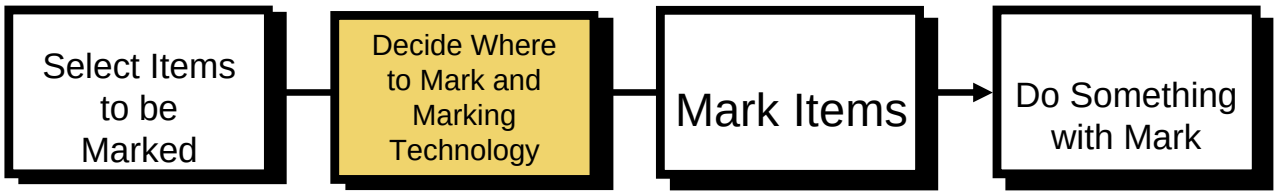


Facilitated Group Approach

- Ensures the right people are making the decisions.

Link UID and SNT

- Fundamental Requirements to support logistics processes.
  - Two pieces of Information
    - Current Part Number
    - SSN (UID)
  - Both pieces of information should be in HRI and MRI.
    - Supports transition phase and objective system.



Cargo Solution Construct #1

- Information Requirements
  - Current Part Number
    - > One Data Element
  - UID
    - > Two Data Elements
- Solution Supports
  - Current SNT requirements
    - > Three Data Elements
  - To-Be GCSS-A
    - > UID Policy
- Real Estate Available
  - HRI & MRI

- Space Limited
  - MRI only

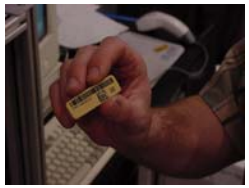
Select Items to be Marked → Decide Where to Mark and Marking Technology → Mark Items → Do Something with Mark

How Are We Marking?

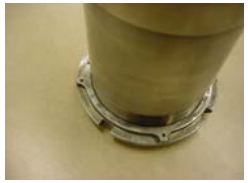
- **Labels**

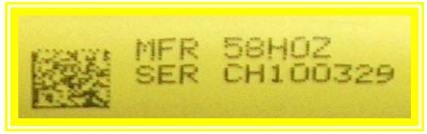
- **Direct Mark**
  - Laser Etch
  - Dot Peen
  - Chem Etch
  - Ink Jet

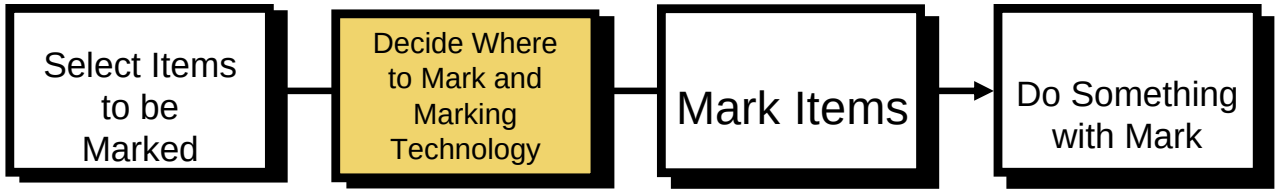
Labels



Direct Marking



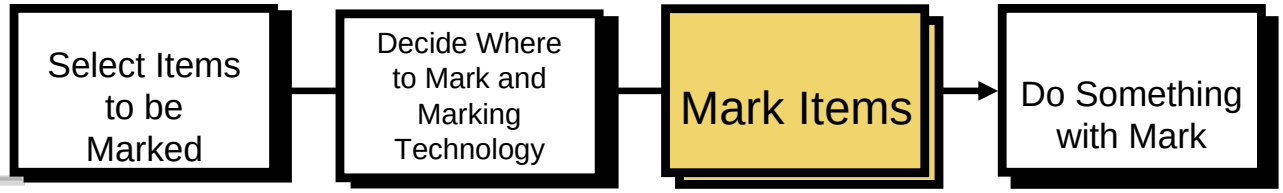




Opportunities for Marking

- **Vendor Marked at Source (New Acquisition)**
  - New Build
  - CAAS
  - 714 Engine
  - All New Solicitations
    - Spares

- **Opportunistic Parts Marking (Legacy)**
  - Reset
    - Campbell
    - Lewis
    - HAAF
  - PBL
    - Rucker
  - F Induction
    - Boeing Government Property Unit (GPU)
  - Recap/OCM
    - CCAD



LEGACY
OPM Mobile Package

- Provide on-site capability to mark approved parts/assemblies
- Dedicated equipment usage personnel
- Link data to UID Registry

Epilog 35W
CO_2 Laser

CERDEC CERAMICS
Laser marking material

ALUMAFMARK
Laser marked aluminum labels

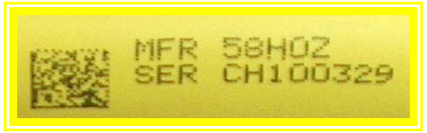
Laser cut stencil and ink

Portable Dot Peen

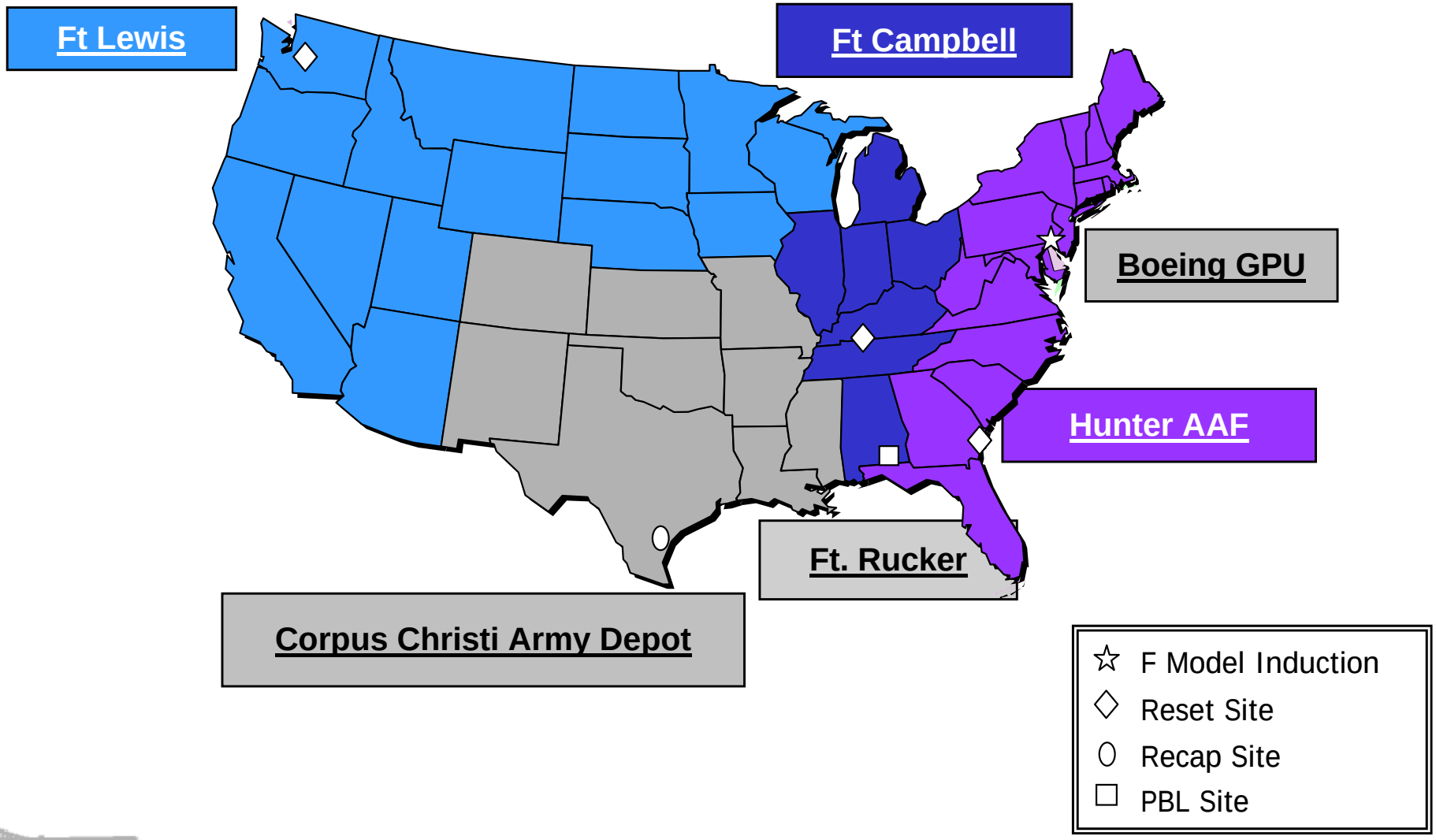
HMP-1500
Portable Ink Jet

Labels

Direct Marking

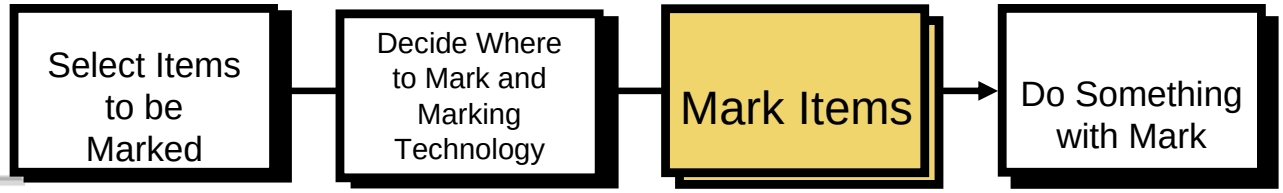


LEGACY
OPM Sites



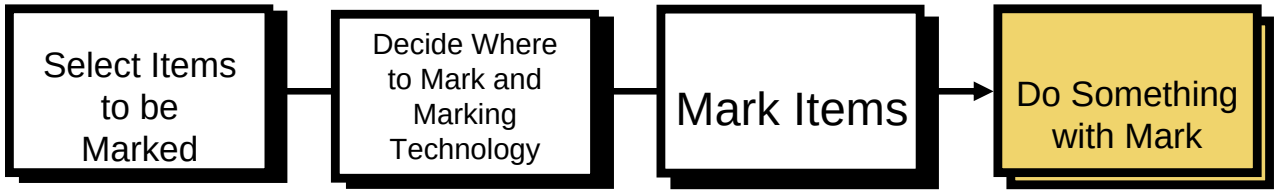
LEGACY
OPM Program

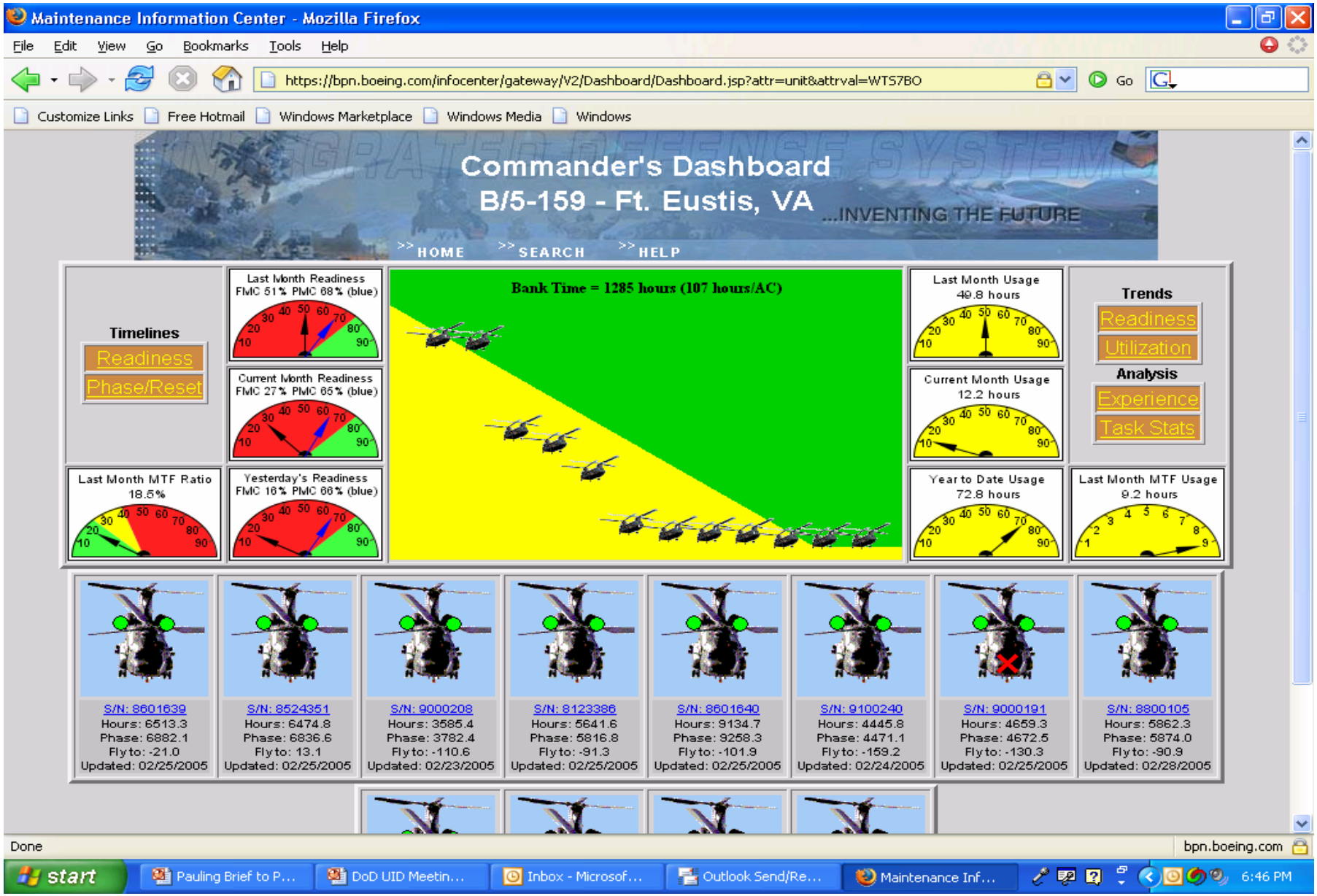
- **Status**
  - Instructions completed & approved for 136 label item
    - Ongoing multifunctional team will develop instructions for all items
    - MEOs will be completed for depot marking procedures
    - ~80 additional approvals w/in ~90 days
  - OPM Mobile Packages (Trailers) Fielded/Operational
  - 5100+ parts marked with UID.
    - Registered with Test Registry



Shared Data

Shared Benefits





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Maintenance Information Center - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

https://bpn.boeing.com/infocenter/gateway/V2/Parts/ACParts.jsp?org=WTS7BO&aircraft=8601639

Customize Links Free Hotmail Windows Marketplace Windows Media Windows

>> HOME >> SEARCH >> HELP

Fitted Parts on A/C 8601639

Part No.	Serial No.	LCN	Type	Description	Cumulative	Num Ovhls	Cage Code	Limit	Parameter	Since Repl	Remaining
234N0003-1	BF164	02A16	On Condition	VIBRATION ABSORBER	2025.4		77272				
234N0003-1	VN222A	02A17	On Condition	VIBRATION ABSORBER	1600.4		77272				
234N0003-1	BF320	02A18	On Condition	VIBRATION ABSORBER	2025.4		77272				
145ES010-5	8604162	04A07E	On Condition	N1 QUADRANT CONTROL	2175.4		77272				
2-001-020-23	LE-71639	04BL	Overhaul	T55-L-712 ENGINE	1056.4	1	99193	2400	Operating Hours	143.4	2256.6
2-131-110-63	1025	04BL02A	On Condition	LINER ASSY, COMBUSTION	2116.4		99193				
2-121-300-31	NOZ-639	04BL02C	On Condition	NOZZLE ASSY 1ST TURBINE	316.4		99193				
2-121-051-14	DISK-639	04BL03A	On Condition	DISK ASSY, 1ST TURBINE	316.4		99193				
2-121-470-20	BMO-8739	04BL03B	On Condition	CYLINDER 1ST TURBINE	906.4		99193				
2-121-110-25	DISK-639-2	04BL03C	On Condition	DISK ASSY, 2ND TURBINE	316.4		99193				
2-121-100-60	90M003	04BL03D	On Condition	NOZZLE ASSY, 2ND TURBINE	906.4		99193				
2-141-140-26	M377911	04BL03E	On Condition	TURBINE ROTOR	906.4		99193				
2-161-620-64	F853	04BL05A	Overhaul	FUEL CONTROL	3250.4	1	99193	2400	Operating Hours	850.4	1549.6
2-001-020-23	LE-19214K	04BR	Overhaul	T55-L-712 ENGINE	2441.4	4	99193	2400	Operating Hours	531.4	1868.6
2-131-110-63	87L005	04BR02A	On Condition	LINER ASSY, COMBUSTION	934.4		99193				
2-121-300-44	4342	04BR02C	On Condition	NOZZLE ASSY 1ST TURBINE	1959.4		99193				
2-121-470-20	022	04BR03B	On Condition	CYLINDER 1ST TURBINE	531.4		99193				
2-121-110-25	A-291	04BR03C	On Condition	DISK ASSY, 2ND TURBINE	1921.4		99193				
2-121-100-60	1129	04BR03D	On Condition	NOZZLE ASSY, 2ND TURBINE	3112.4		99193				
2-141-140-26	M-377893	04BR03E	On Condition	TURBINE ROTOR	1365.4		99193				
2-161-620-68	71709	04BR05A	Overhaul	FUEL CONTROL	1401.4	0	99193	2400	Operating Hours	531.4	1868.6
145R2003-10	A4-233	05A01	Overhaul	HEAD ASSY ROT WING FWD	4686.4	3	77272	2400	Operating Hours	41.4	2358.6
114R2050-35	FM0611	05A01A	Retirement	HUB ROTARY WING FWD	140.4		77272	2887	Operating Hours	140.4	2746.6
114R2155-1	A14694	05A01HG	Retirement	TIE BAR ASSY	877.4		77272	4800	Operating Hours	877.4	3922.6
114R2155-1	A14527	05A01HR	Retirement	TIE BAR ASSY	877.4		77272	4800	Operating Hours	877.4	3922.6
114R2155-1	A14690	05A01HY	Retirement	TIE BAR ASSY	877.4		77272	4800	Operating Hours	877.4	3922.6

Done bpn.boeing.com

start Pauling Brief to P... DoD UID Meetin... Inbox - Microsof... Outlook Send/Re... Maintenance Inf... 7:03 PM

Summary

- Maintenance AIS is Foundation Piece of the a Life Cycle Management Model.
  - Enabled by the UID program to provide error free data.
- AIS can grow to include all Maintenance, Supply and Training Functions.
- UID program represents the ability to move “error free” data across DoD enterprise.
- Requires depot and vendor buy-in to complete chain for Total Asset Visibility.

Back-Up

Legacy Issues
Opportunistic Parts Marking

- Dynamic policy guidance
  - ➢ Work with Registry
- Unknown workload
  - Engineering required for DPM
- Link at CCAD for legacy marks.
  - Pilot program with depot to identify issues
- PMMS connectivity
- Label durability

New Acquisition Issues

- Contract language
- Cost
- Items to mark (policy vs. common sense)
- Who pays non-recurring?
- Drawing changes
  - Who controls drawings for vendors
  - Required prior to contract
- DLA, CECOM parts

Program Level Issues

- **AIS**
  - Expand capabilities through SIM
  - Connect Flight line to Depot
  - UID registration
- **Scanners**
  - Cost
  - Size
  - Performance
- **Coordination among all involved (IMMC, DLA, CECOM, PMs, PEO)**
- **Resourcing**
  - Sustainment
  - Non-recurring

LEGACY OPM
Lessons Learned

- **SNT Database Inaccuracies**
- **Label Durability**
- **Multiple Part Numbers**
- **Host Installation Support**
- **Approval Process**

Path Ahead

- Complete Parts Marking Procedures
  - Engineering approval for OPM
- Obtain resourcing for out-years
- Analyze/validate CCAD and GPU OPM processes
- New acquisition compliance

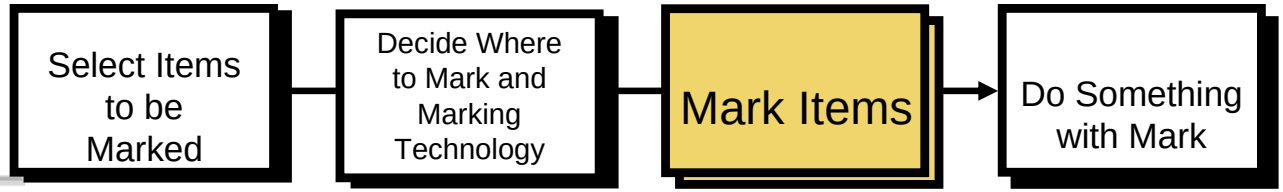
PMMS Data

- Machine Generated Data
  - PNR
  - SPL
  - UCN
  - Description
  - Time Stamp
  - Location
  - Job Number
  - UID
  - Validity Grade of Mark
- Human Entered Data
  - Serial number
  - CAGE Code
    - > Pull Down Menu
  - PID

LEGACY
OPM Initiatives

- **Schedule**
  - RESET Aircraft coming back from SWA over next 3 years
  - CH-47F Remanufacture Program
  - PBL at Ft Rucker over next five years
  - Recapitalization/OCM at CCAD
  - Capability at Boeing GPU
- **Funding**

  - $1.2M annual UFR sustainment cost (4 OPM Field Agents, Supplies, PMMS S/W Lease)



OPM Cost Background

- PM funded initial investment of 5 trailers at a total cost of $2M
- Recurring cost estimated at $1.2M
  - Operator Support (4)
  - Supplies
  - Software lease (PMMS)
- Recurring costs are annual fixed costs and are unfunded
- Excess Capacity capability unknown at this time
  - Lessons learned over next 6-12 months will define capacity
  - Anticipate excess capacity