Unique Identification (UID)

UID Program Manager Workshop
ACAT 1D – Aviation

March 8-9, 2005

Agenda - Tuesday

8:30 – 8:45	Introductions and Agenda	Ms. LeAntha Sumpter
8:45 – 9:15	Why UID?	Ms. LeAntha Sumpter
9:15 – 9:45	Depot Strategy	Mr. David Pauling
9:45 – 10:00	Break	
10:00 – 10:30	PM Duties and Responsibilities (Milestone Criteria and 5 Questions Review)	Mr. Charlie Lord
10:30 – 11:00	Technical Documentation, Part Marking Quality, and Virtual UII	Mr. Rob Leibrandt Mr. Max Westmoreland
11:00 – 11:30	CH-47 Lessons Learned	Mr. Chris Sautter
11:30 – 12:00	Performance Based Logistics	Mr. Jerry Beck
12:00 – 12:15	Break	
12:15 – 1:00	Data Submission (Working Lunch	Ms. Pam Rooney
1:00 – 1:15	Break (reconfigure room)	
1:15 – 4:30	UID Corporate Strategy Presentations	

Agenda - Wednesday

8:30 – 10:00	Program Planning Breakouts	
10:00 – 10:15	Break	
10:15 – 12:00	Program Planning Breakouts	
12:00 – 1:00	Lunch	
1:00 – 2:30	Program Planning Breakouts	
2:30 – 2:45	Break	
2:45 – 3:30	Program Planning Breakouts	
3:30 – 3:45	Break (reconfigure room)	
3:45 – 4:30	Take Aways and Next Steps	Mr. Charlie Lord

Why UID?
(LeAntha Sumpter)

DoD Vision for UID

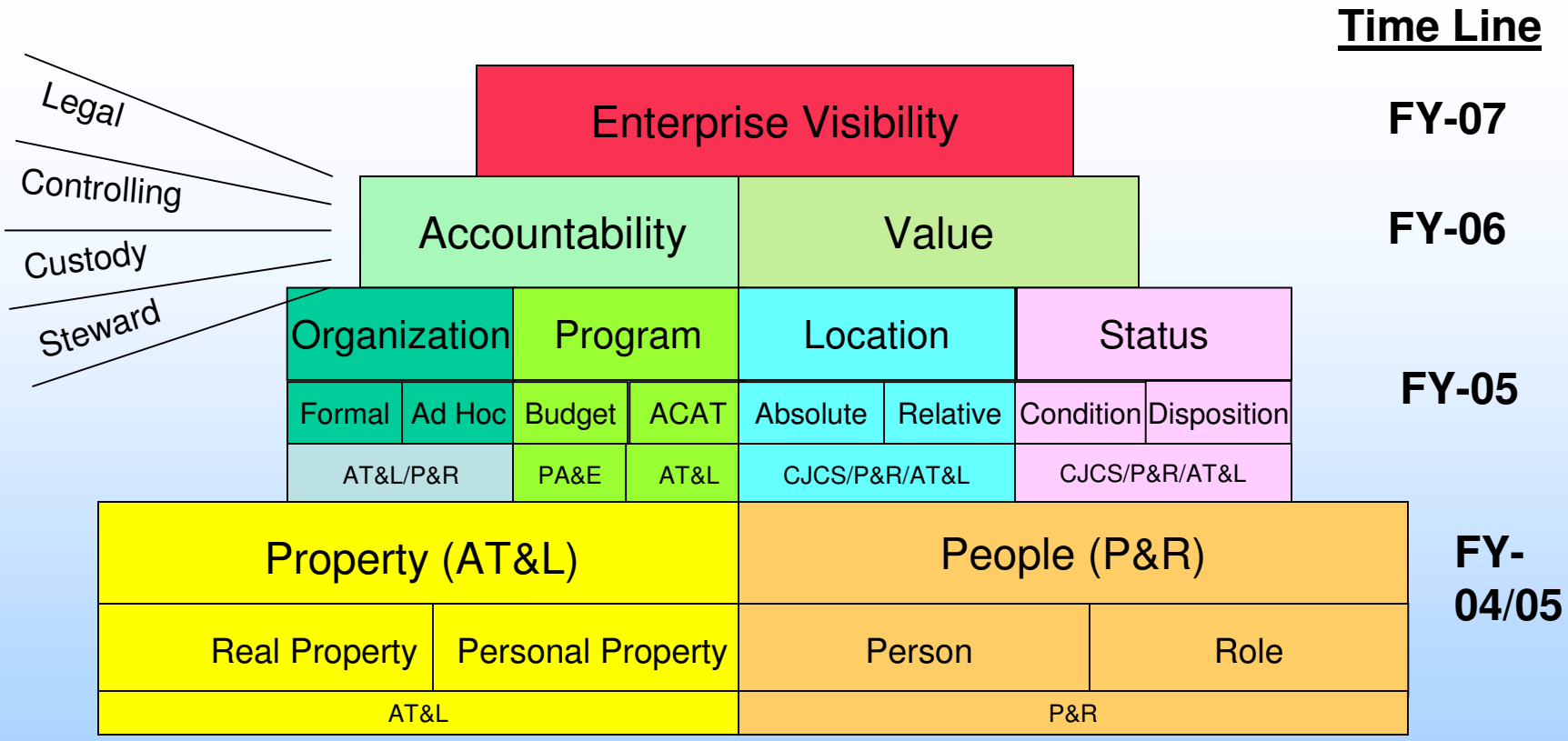
DoD, its coalition partners, and industry efficiently and effectively manage people, property, and intangible assets using globally unique identification

UID Goals

Ubiquitous and Globally Unique Identifiers that Capitalize on Leading Practices will enhance

- ✓ ***Lower Life Cycle Management Costs***
- ✓ ***Improve Operational Readiness***
- ✓ ***Improve Accounting and Visibility***
- ✓ ***Reduce Burden on Workforce***

Data Roadmap

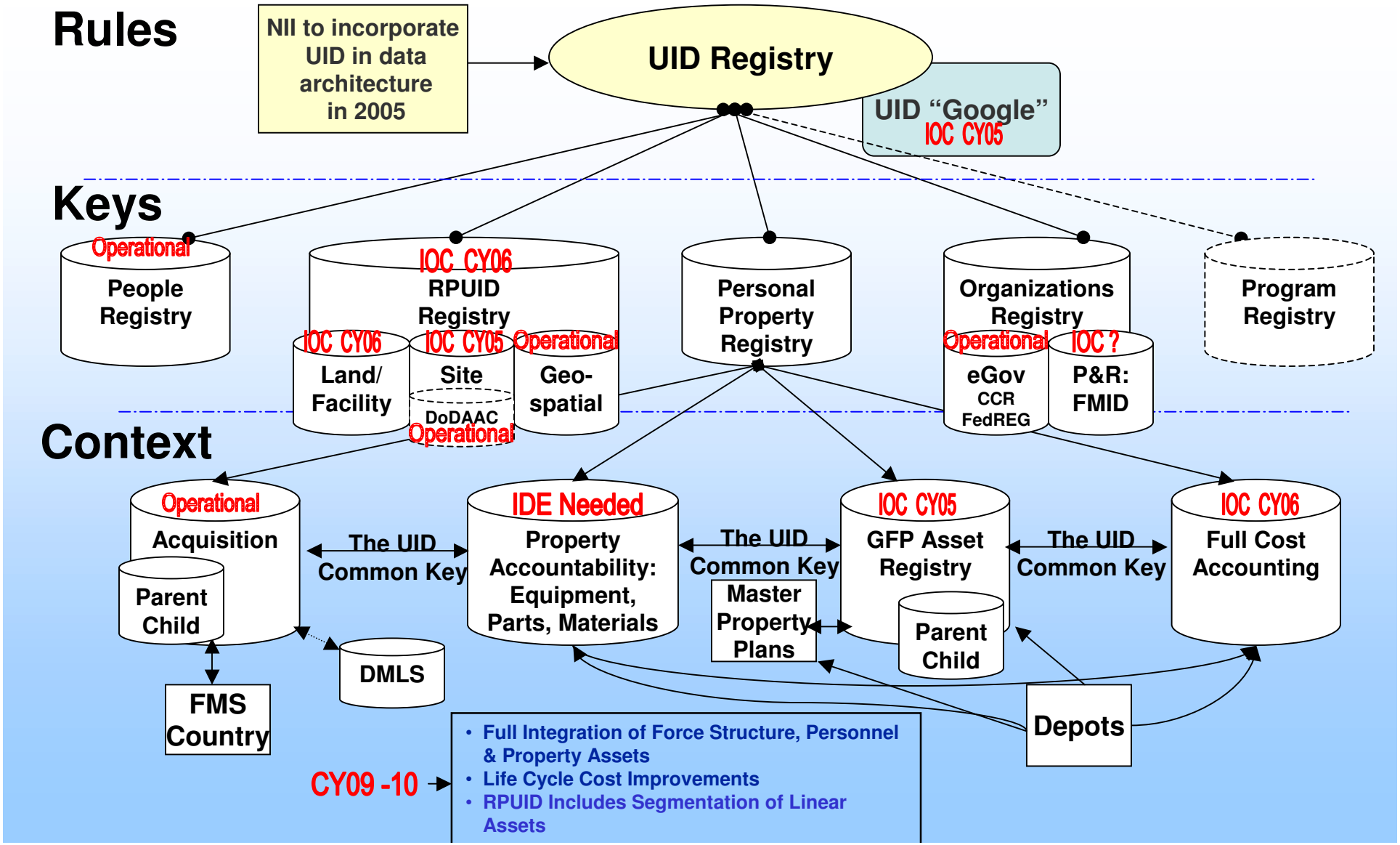


UID: What makes it so special?

UID…

- **Provides *"The Key"* to discovery and correlation of item, real property and human resource information so**
  - ✓DoD can **consistently locate, control and value assets** anywhere and anytime
- Is an applied ***leading industrial practice*** interconnecting people, item, real property (places), organizations, force structure, programs, etc.
- Enables ***globally accessible and secure*** enterprise data
- Registries enable ***creation of UID mission critical services*** to
  - ✓Translate legacy data for existing DoD systems
  - ✓Enable access for operational support
  - ✓Enable joint paperless management

UID Registry Concept



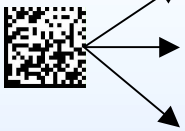
What's the UID punch line?

- Data should be system agnostic
- Data should be functionally agnostic
- Emphasize XML and EDI; migrate from MILS
- People, Item and Real Property data schemas are identified
- Program, Organization and Location UIDs are TBD
- Systems must conform to key data and transaction hub requirements
- Data transfers should use existing translation capabilities to the maximum extent possible
- DoD is developing a vision for enabling UID data repositories

UID: How is it Constructed for UII?

The UID shall be derived from its discrete component data elements – the UID is not required to be marked on the item as a separate data element

From the Data Matrix:



Enterprise Identifier = 0CVA5 (CAGE Code)

Original Part Number = 1234

Serial Number = **674A36458**

The UID can be derived using the IAC for CAGE, which is “D”:

UID Construct 1	UID Construct 2
If the Serial Number is Unique within the Enterprise Identifier	*If the Serial Number is Not Unique within the Enterprise Identifier but is Unique within the Part Number*
D0CVA5674A36458	**D0CVA51234674A36458**

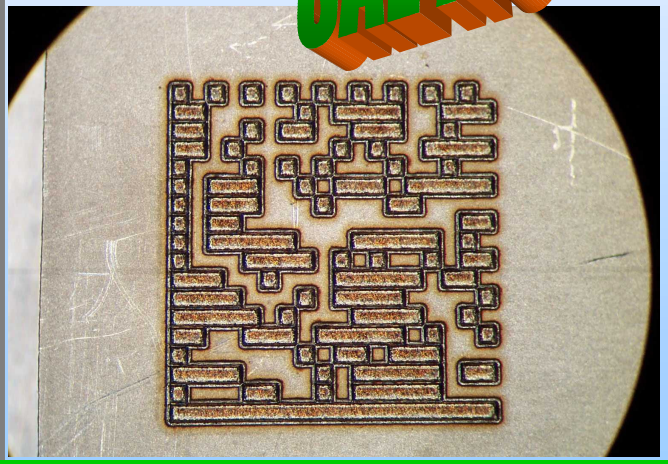
The Main Processes for Applying 2-D Data Matrix to Parts, Labels or Data Plates

Dot Peen

Electro Chemi Etch

SAE AS 9132

Ink Jet/ Printing



Laser

Source: Rolls-Royce, Nat Russhard

UID-RFID Database Data Relationship

End Item Database Data (15)

- UID (Concatenated)
- Descriptive Data
  - UID Data Elements (3)
  - Issuing Agency Code
  - UID Type
  - Item Description
  - Unit of measure
- Acquisition Data
  - Contractor
  - Contract Number
  - CLIN/SLIN/ELIN
  - Price
  - Acceptance Code (identifies acceptor)
  - Acceptance Date
  - Ship to code

Embedded Items of End Items (10)

- UID (Concatenated)
- Descriptive Data
  - UID Data Elements (5)
  - Item Description
  - Unit of measure
- Parent UID as of delivery date
- GFP flag

RFID Data at the Pallet Level

- Pallet EPC
- Shipping Data

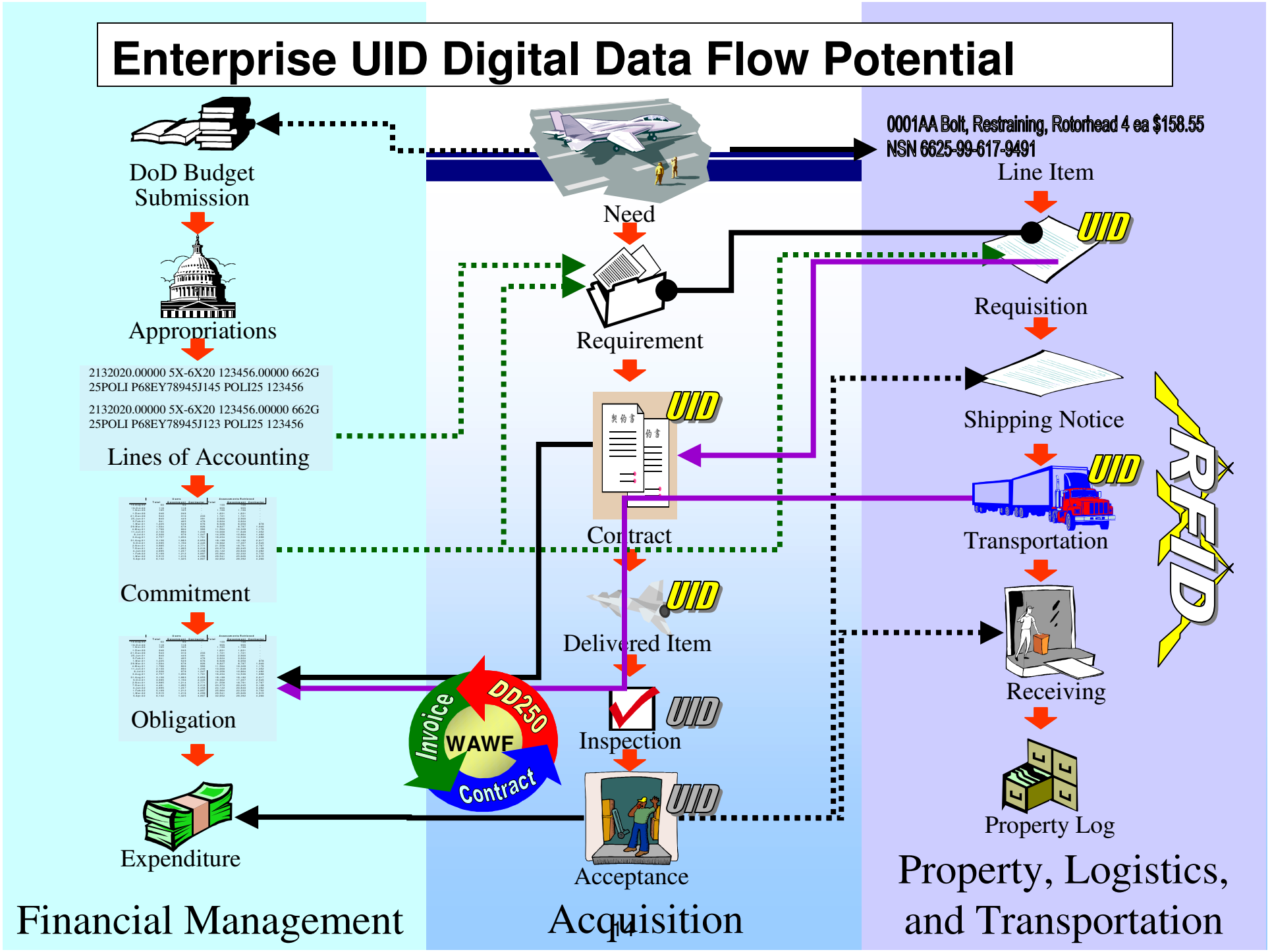
RFID Data at the Case Level

- Pallet EPC
- Case EPC

RFID Data at the Item Package Level

- Case EPC
- Item Package EPC or UID

Enterprise UID Digital Data Flow Potential



What We Have Learned (DoD Property Environment)

- Need for common approach to entity identification across DoD
- Cannot get clean audit or asset visibility without standardizing data and processes
- DoD has unreliable property data and poor internal controls
  - Countless property management systems - ranging from paper to automated systems, spanning accountability, maintenance, disposal, inventory, and distribution
  - Currently personal property handoffs occur inconsistently (probably at least 75 different processes)
- Target three future receipt and acceptance approaches – Will take five years to re-engineer all; deployment undetermined
  - Step one – DoD and Business Partners (Include GFP Registry)
  - Step two – Internal DoD
  - Step three – External Federal and Foreign
- Re-engineering effort will be directed by AT&L

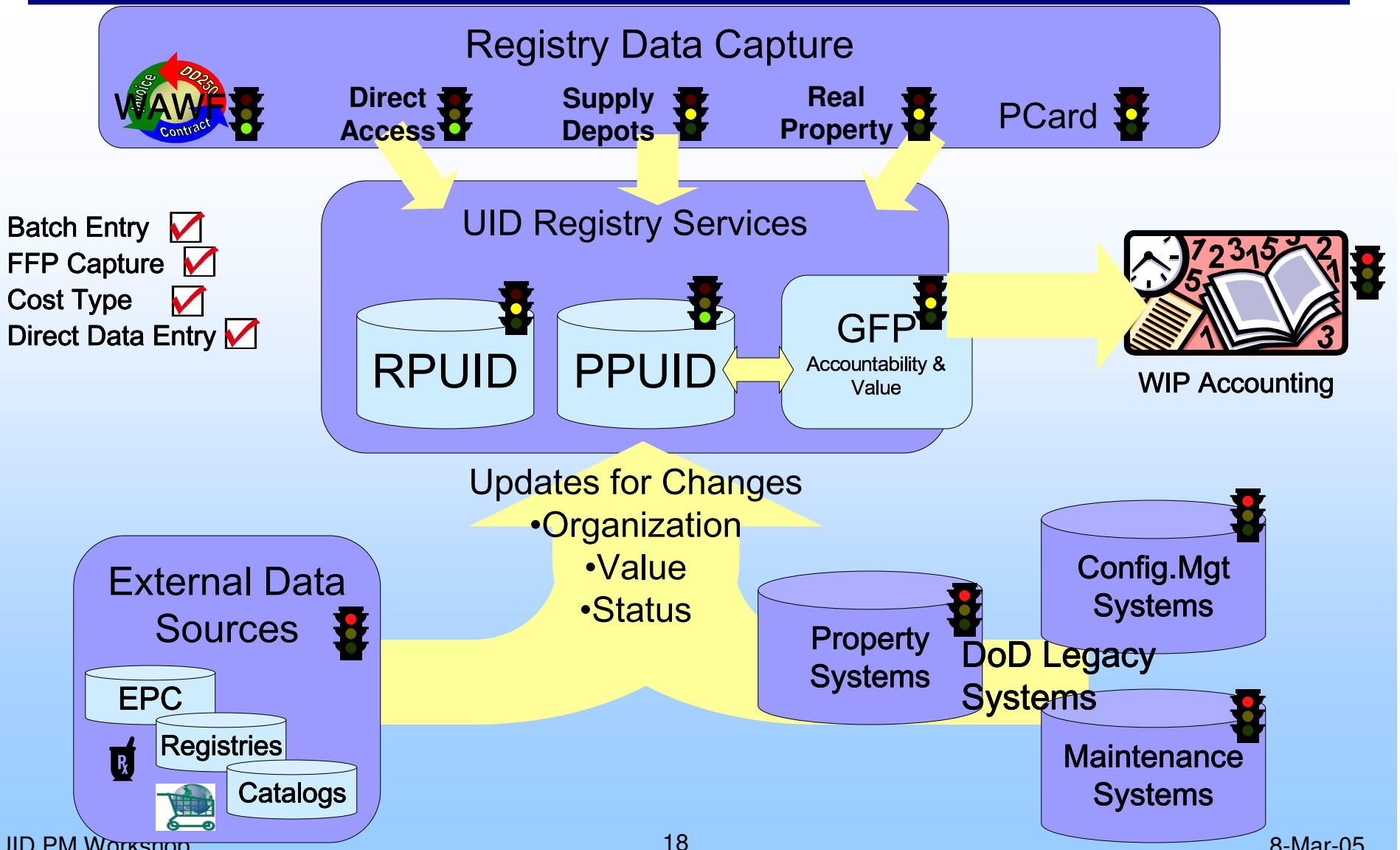
Reengineering Property Transfers

	Acceptance Point	Phase I Present-May 05	Phase II Oct 04-Jan 06	Phase III Oct 05-Sep 07	Phase IV Oct 06-Sep 08
External – Internal acceptance	Source and Destination	Dependent on completion of WAWF deployment			
External – Internal receipt and acceptance	Destination	Dependent on DSS-WAWF Integration			
Internal – External receipt and acceptance	Destination		GFP capture at WAWF or contractor		
Internal – Internal receipt	Destination			Integration w/Property Records	
Internal – Internal acceptance	Source and Destination				Captures & reconciles accountability transfer
External – Internal acceptance (Real Property)	On site				Integrating acquisition & real property records

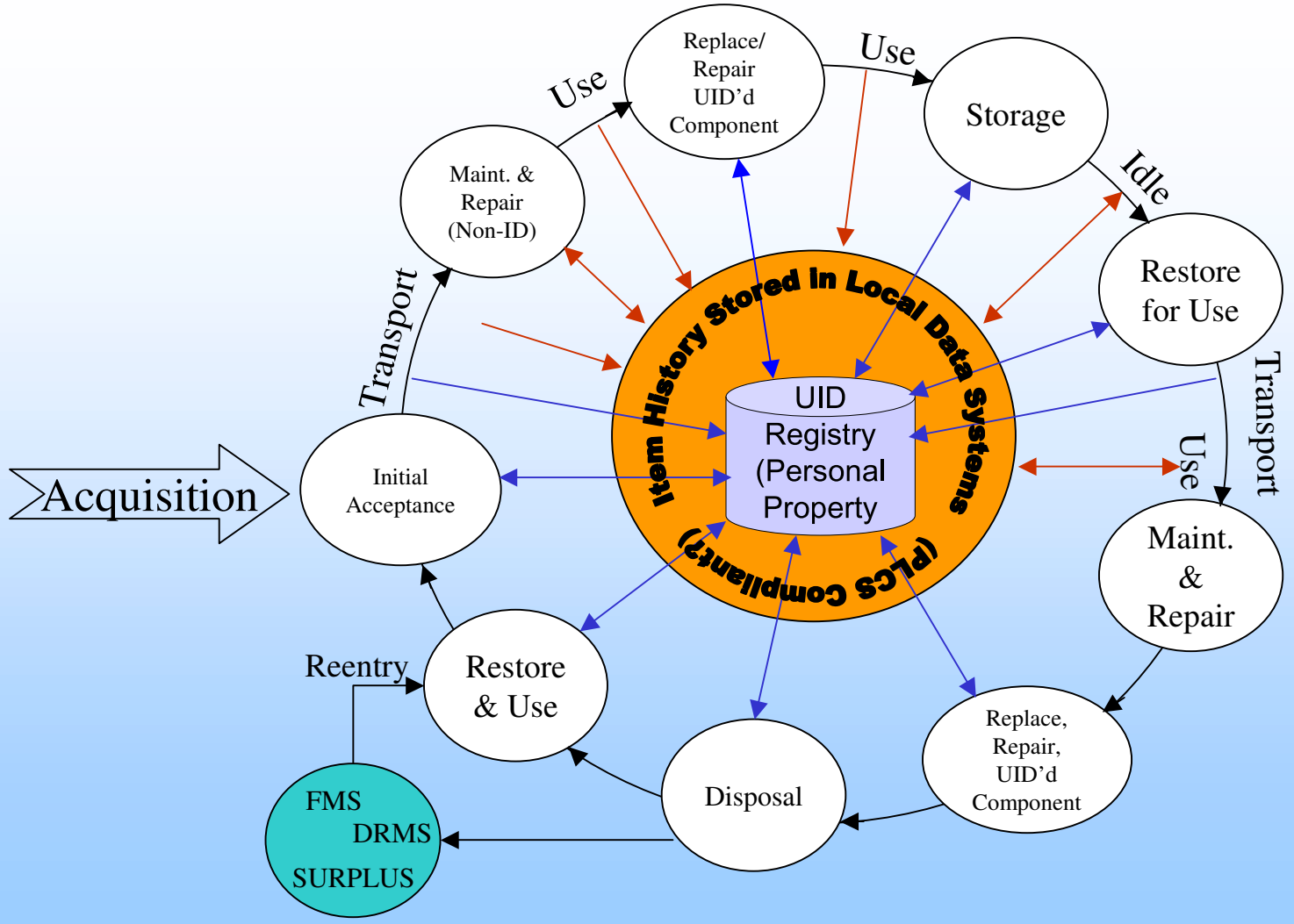
Principles for Future Property Environment

- Create data one time, reuse often
- Property should only be in one accountability system at a time
- Need to separate accounting from accountability
- Acquisition value will only be recorded and updated in the UID registry
- UID Registry will -
  - Never be an accountability system; but will be the audit trail of current and previous accountability systems
  - Maintain basic/master UID data
  - Not maintain contextual data (transactional data); the registry will point to accountability system(s)
  - Will be updated with key transaction events
- The concatenated UII is the common data key across systems
- DCMA will have access to contractor stewardship records that augment the UID Registry
- If item is not serialized at the point of shipment, it must be serialized at receipt

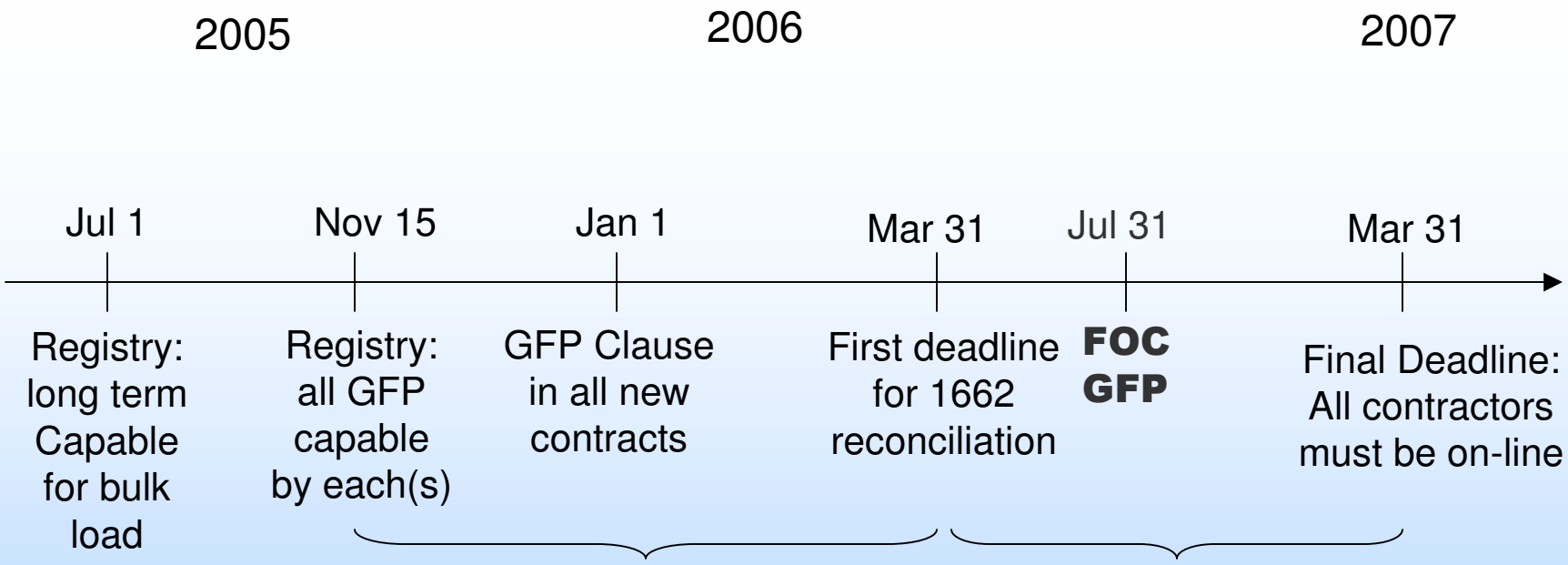
Property UID Systems Environment "To Be"



Item Lifecycle – Data Storage/Access Concept of Ops



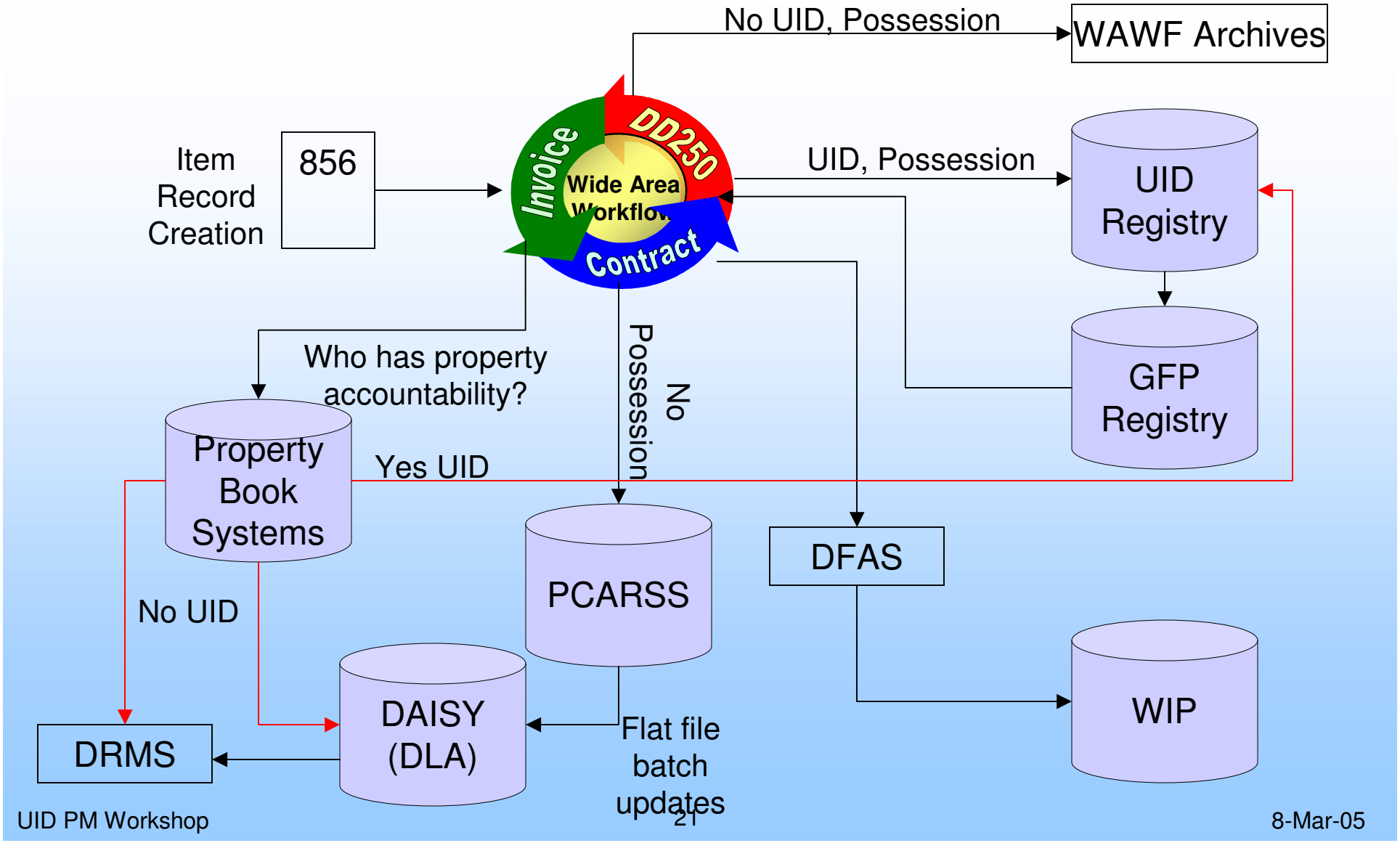
UID Registry/1662 timeline (2005-2006)



- Contractors must complete 1662 no later than Mar 31, 2006
- Data on all GFP must be contained in registry prior to reconciliation

- Small businesses may submit paper 1662
- Delinquent large companies owe 1662

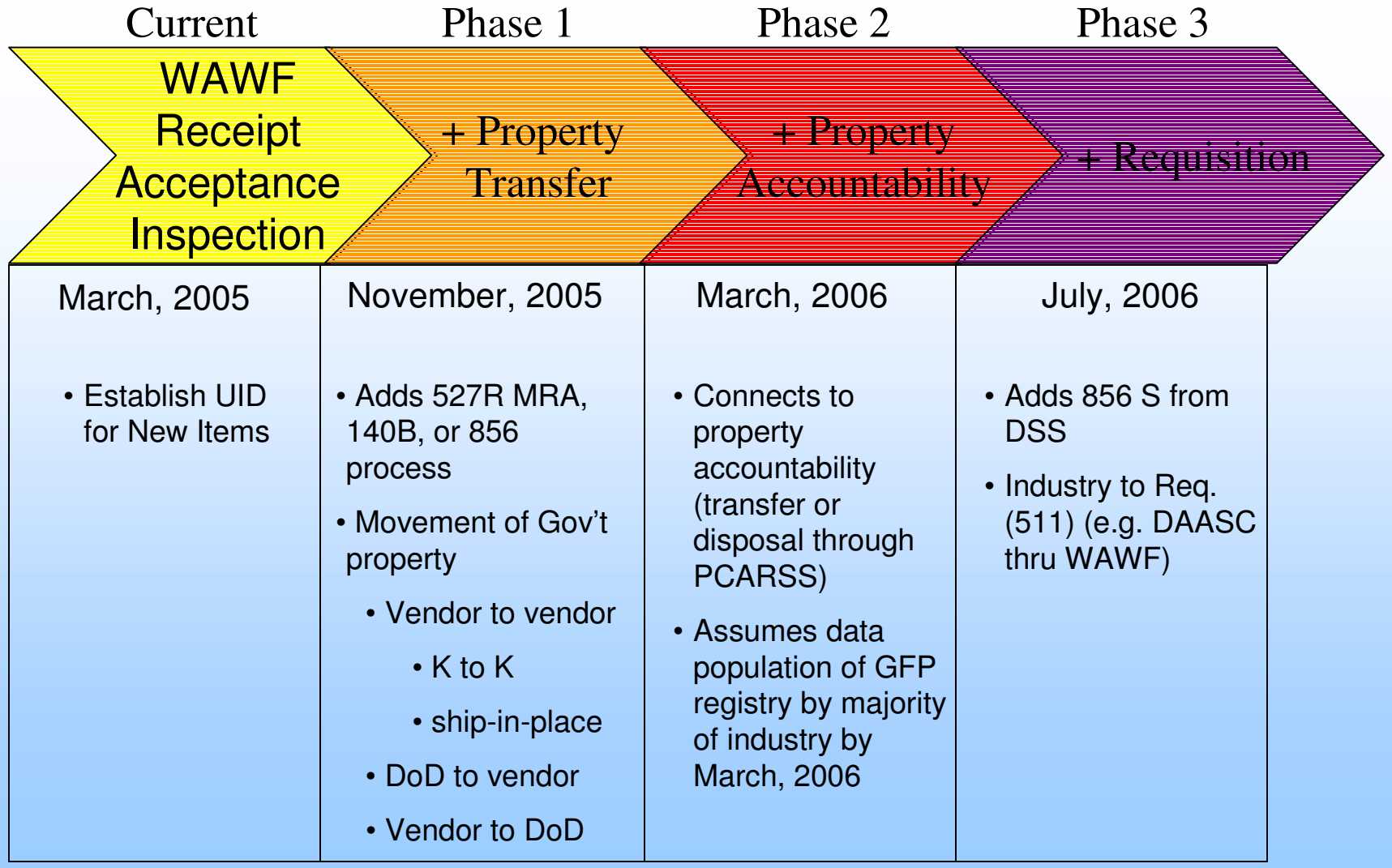
Portal for Property Transfers



Strategic Next Steps for Item UID

- **March 05**
  - Refine UID CONOPS with Depots
  - UID Directive Staffing
  - Draft Budget Instructions
  - Finalize initial paperless GFP capability
  - ACAT 1D Aviation UID PM Workshop
  - Refine Org and Location UID Family of Capabilities
- **June 05 - ACAT 1D UID PM plans due**
- **July – Nov 05 - Non-ACAT UID PM Workshops**
- **Sept 05 - Paperless GFP IOC**
- **January 06 – Non-ACAT UID Plans due**

WAWF Development



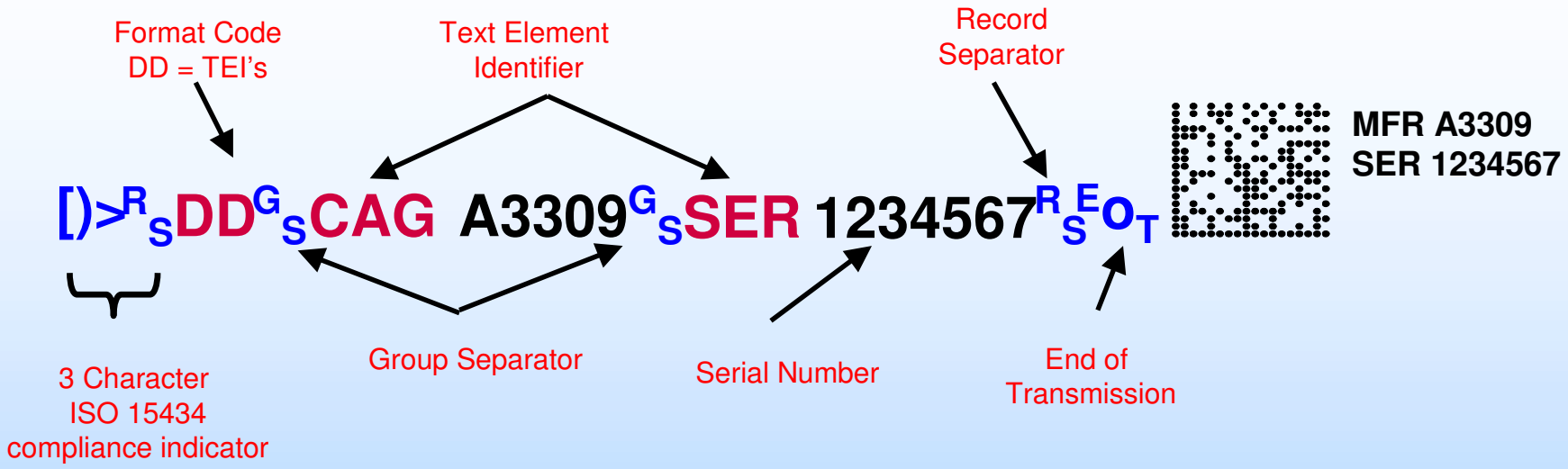
Background Slides

UID Data Element Summary

	Descriptive data
	UID
	Issuing Agency Code
	Enterprise Identifier
	Original Part Number
	Serial Number
	UID Type
	Description
	Batch/Lot
	Current Part Number
	Current Part Number Effective Date
	Manufacturer Identifier
	Parent UID
	ContractInfo
	Contract Number
	Prime Contractor Identifier
	Acceptance Code
	Acceptance Date
	Acquisition Cost
	CLIN/SLIN/ELIN
	Foreign Currency Code
	Ship-to Code
	Unit of Measure

	Custody
	CAGE
	Contract Number
	DoDAAC
	DUNS
	Received Date
	Sent Date
	Status Flag
	Category Code (E or M)
	Mark
	Contents
	Effective Date
	AddedOrRemoved
	Marker Code
	Marker Identifier
	Medium
	Value
	Open Items
	Custodian or Steward (System)
	Location UID
	Program UID
	Item Status
	Current Value
	Alias (system unique)

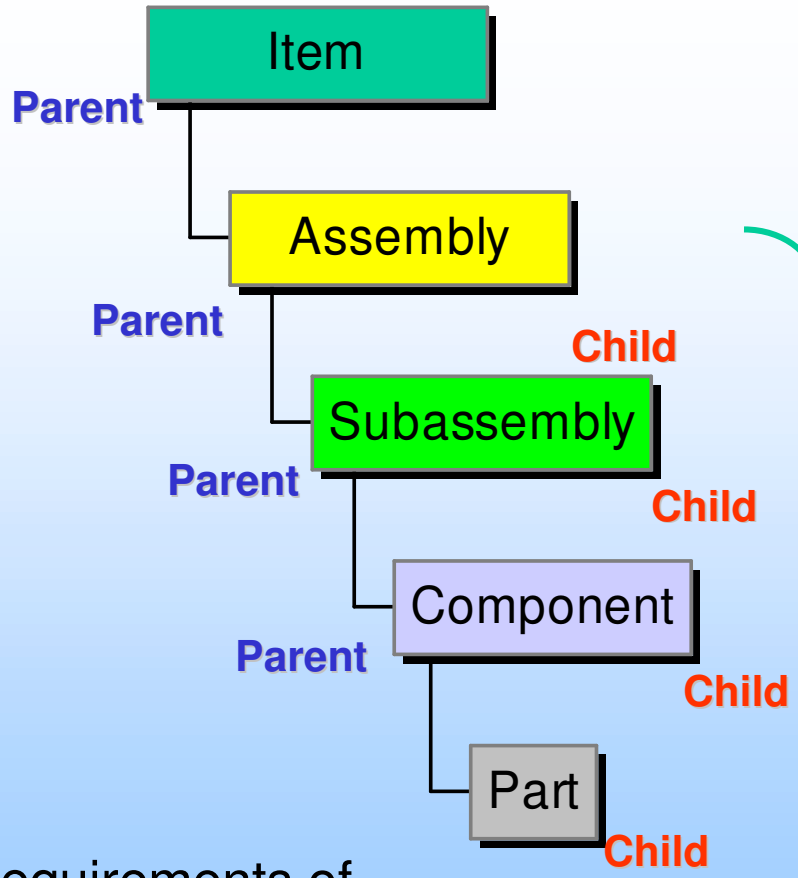
Example UID Encoded Data Matrix



Note: This example uses construct #1 with Text Element Identifiers (TEI).

UID#/UII = DA33091234567

Parent Child Hierarchy



Serially managed or critical embedded items

Derived from the requirements of DFARS 211.274

Depot Strategy
(David Pauling)

UNIQUE IDENTIFICATION (UID)

PM Responsibilities
Milestone Criteria
5 Frequent Questions
(Charlie Lord)

PM Duties and Responsibilities

- PM is Responsible for:
  - Establishing PM UID Implementation Team
  - Ensuring Program achieves UID stated planning goals & MS Criteria
- PMO UID Representative (as agent of the PM) is responsible for:
  - Team Building…Team Interaction (Gov and Ktr)…Plan Execution
  - Maintaining Cog on latest policy & directives
  - Floating Issues up to leadership as they arise
  - Networking with Service and UID PM Members
  - Budget Development
  - Writing & Staffing the Plan
  - Ensure UID Implementation plan:
    - Is Consistent with DoD, Service UID Policy
    - Is Consistent with Requirements
      - ORDs, SRDs, APs, Maintenance Concepts, Service Depot Policies, Service UID Instructions, Prime contractor SPIs as applicable, Supply Policies etc etc
    - Applies UID marking consistently across the Program Enterprise
    - Is Consistent and contributes toward successful achievement of MS Approval Criteria

(in other words ..all the stuff that IPT leads normally do)

Milestone Criteria

- Applicable to all programs that result in the delivery of items to the Department of Defense
- Program plan incorporates UID requirements for all new end items that meet the UID criteria
  - Contracts include the UID DFARS clause
  - Assessment of equipment and reparables, material, and consumables under $5000
  - Supports Performance Based Logistics objectives for total asset visibility, life cycle inventory management, and serial number tracking
  - Consistent with financial accounting objectives
  - Consistent with property management objectives
  - Integrates UID in configuration and document management
  - Organic manufacturing addressed
- Program plan incorporates UID requirements for all embedded items that meet the UID criteria
  - Contracts include the UID DFARS clause
  - All serially managed embedded items included

Milestone Criteria

- Program plan addresses UID requirements for legacy items
  - In-service items have UID retrofit plans for 2010 completion
  - Inventory items have been included
  - Embedded items have been included
  - Consistent with Performance Based Logistics objectives
- Program plan addresses AIT infrastructure requirements
  - Maintenance and supply support
  - Organic manufacturing
  - Deployable assets
- Program plan addresses compatibility with automated information systems
  - Program-specific information systems
  - Cross-program/cross-service information systems

5 Key Questions

1. ***What are the current plans for accurately tracking/monitoring the corporate UID recurring and non-recurring costs associated with the development and implementation of UID? How will the non-recurring UID development costs be shared, monitored, and reported to Government customers (PEOs) (e.g. part of indirect labor rate)?***

   Memo to the Services date July 9, 2004 Director, Defense Procurement and Acquisition Policy:

   "Costs of non recurring or extraordinary costs that would have not otherwise been incurred shall be separately accumulated as a deferred cost. This deferred cost shall be amortized over a period during which the benefits of the non recurring costs are expected to accrue, but not to exceed 5 years." [PCO and contractor have flexibility to expense these costs…..]
   http://www.acq.osd.mil/dpap/Docs/uid/ContractPricingCost%20Accounting-ComplianceDFARS252.211-7003.pdf

5 Key Questions

2. ***Gas turbine engine components are by nature expensive due to their complex design and exotic materials. The $5000 price limit per piece part will require propulsion system contractors to apply UID to many individual engine piece parts that are not normally serially tracked. These actions will certainly drive increased costs into the manufacturing process, especially for legacy engine programs where those parts are not currently tracked. Are there any provisions within UID to reduce the impacts of UID introduction on these types of programs?***

   Our experience is that the vendors mark more parts than the government requires. Pratt and Whitney, General Electric and Roll Royce are leaning forward to mark their parts due to bottom line reductions in production costs by direct part marking. Propulsion systems will eventually undergo depot level maintenance at some point if they cannot be marked initially…should be in the overall UID planning to address delivered equipment.

5 Key Questions

3. ***Does a company have to stick with a syntax/semantics format or can it change from DI's to TEI's? If we need permission, whom do we contact? Do we need to flow down the same syntax/semantics to our suppliers that we use? What if they are construct 1 and we are construct 2?***

   As long as the UID is unique, it does not matter what construct is used. Some companies are choosing to mix UID constructs within plant operations but bottom line the prime contractor is responsible for ensuring uniqueness.

   Prime contractors may direct their vendors to use the prime's EID. however, from a manufacturing process perspective, this may not be the most efficient and effective way for their vendors to mark parts. The prime will also have the added responsibility of ensuring uniqueness of the sub-contractor's serial number within the prime's enterprise (Construct #1) or the sub-contractor's serial number within the sub-contractor's part number within the prime's enterprise (Construct #2)

5 Key Questions

4. ***Many Commercial Logistics Support contracts include a mix of government owned and contractor owned spares inventory to support the performance of maintenance requirements. How do UID requirements apply under such services contracts where there exists such a mix of parts?***

   The DoD unique item identification requirements are not required for embedded assemblies, subassemblies, components and parts not serially managed by DoD. If the Department is not assuming the maintenance or replacement function, all contractor-owned spare parts inventory, whether maintained by the prime contractor or a second-tier supplier do not have to adopt the UID requirement.

   Conversely, if the government is assuming a maintenance role and will manage the items then UID must apply. As you know some PBLs provide a service to government owned equipment for which the government still serially tracks the item.

5 Key Questions

4. ***Many Commercial Logistics Support contracts include a mix of government owned and contractor owned spares inventory to support the performance of maintenance requirements. How do UID requirements apply under such services contracts where there exists such a mix of parts?***

Questions that may help identify DoD serially managed supplies:

- Who owns the end item?
- Who owns the spares now and at the end of the contract?
- Who owns an installed spare?
- Who repairs contractor spares?
- Who repairs government spares?
- Are spares handled by the military distribution system?
- How are government personnel involved?
- How are maintenance and supply data handled?

5 Key Questions

5. What office or group is responsible/what is in place to create commonality between services (type UID, readers)?

Service AIT offices are taking a leadership role in determining common equipment requirements. The DoD does not endorse any specific vendors of materials or services designed to support UID implementation. The DoD does not approve or certify these service providers - the concern of the DoD is that the marks meet the requirements of the governing standards.

AIM Global, the Association for Automatic Identification and Mobility, includes a number of vendors that provide marking services and products. Their website is www.aimglobal.org.

UNIQUE IDENTIFICATION (UID)

Technical Documentation
(Rob Leibrandt)

Technical Documentation

- Machine readable part-marking requirements may not be included in technical documentation for a system that has completed its final design review.

- The manufacturing or maintenance processes must be instructed in some manner on how to place the UID mark on qualifying items.

- The documentation process should be efficient, since neither the DoD nor industry can afford a burdensome cost for non-recurring engineering charges.

Leveraging Existing Part Marking Processes

- Replacing/modifying existing data plates with UID labels.
- Issuing a global engineering change notice.
- Issuing UID part-marking work orders into the existing manufacturing and enterprise resource planning processes.
- Changing company part marking quality standards.
- Consolidation of drawing change requirements when the changes do not require an immediate drawing update.
- Direct part marking will require more engineering analysis than labeling.

Part Marking Quality
(Max Westmoreland)

Direct Part Marking Quality

Problem

- Vendors having difficulty complying with quality parameters for machine readable direct part markings.
- Specifically, achieving a grade of “B” for direct part marks, which was required by MIL STD 130L.
- Low contrast requirement for the direct part mark is the pacing issue on achieving a “B” grade.

Direct Part Marking Quality

- MIL-STD-130L w/CHANGE 1, 20 December 2004 adjusted direct part marking (DPM) quality requirements for UID items as follows:
  - Dot peen, laser etch, and chemical etch – SAE AS9132 (no contrast requirements)
  - Ink Jet, printing on label materials, and all other marking methods including thermal transfer – Minimum print quality of grade "B", measured with an aperture size of 0.005 inch with a light source wave length of 660 nm $\pm$ 10 nm. Measurement methodology specified in ISO/IEC 15415

UNIQUE IDENTIFICATION (UID)

Virtual Unique Item Identifier (UII)
(Max Westmoreland)

Virtual Unique Item Identifiers

- Virtual UII – Identifies a legacy item until a trigger event occurs for physical marking
- Requires innate serialized identity data to be previously marked on the item
- Item must qualify for UID, i.e., =/>$5,000; mission essential or controlled inventory if <$5,000; or embedded DoD serially managed item
- Used for legacy items in operational use, in inventory and government property in possession of contractors

Virtual Unique Item Identifiers

Trigger Events

- Change in location - taken out of service at one place and moved to another to begin service
- Change in status - taken out of service and placed in maintenance or returned to inventory
- Change in program - shifted from control of one program to another
- Change in accountability - moved from the custody of one organization to the custody of another

CH-47 Lessons Learned
(Chris Sautter)

Performance Based Logistics
(Jerry Beck)

Data Submission
(Pam Rooney)