



Unique Identification (UID)

HOW TO ACHIEVE COMPLIANCE
By Managing UID Data

A Guide For DoD Contractors & Suppliers
Who Must Report
End Item Deliverables
and
Government Furnished Property (GFP)
to
The Department of Defense (DoD)

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The Situation

The Department of Defense (DoD) has adopted policy¹ that requires all tangible items, including assets and personal property owned by the DoD, to be marked with a unique serialized identification number (UID) effective January 1, 2004. This applies equally to legacy and newly requisitioned government furnished property (GFP), with the goal of placing 100% of GFP in the new UID Registry.

The purpose of the UID mandate is to achieve visibility of all assets for continuous reporting to the military's Wide Area Work Flow (WAWF) system. This will enable better management of components of complex DoD systems over their complete life cycle, ensuring that all maintenance, transportation and supply-related processes are captured electronically in order to provide intelligent data for knowledge-enabled logistics. The collected data will also satisfy GAO requirements for cost containment and spending accountability. The intent of the mandate is sound, but the standards chosen to implement the mandate are complex and will affect DoD contractors and suppliers, obligating them to mark and track government deliverables and property and report their data frequently.

An item must be uniquely identified if: (1) The acquisition cost is \$5000 or more, (2) It is either serially managed, mission essential or a controlled inventory piece of equipment, a repairable item, or a consumable item or material where permanent identification is required, (3) It is a component of a delivered item, and the program manager has determined that unique identification is required, or (4) A UID or a DoD-recognized UID equivalent is available.

The label or mark that must be generated and applied to the end item or property must also meet all MIL STD 130 formatting specifics with regard to minimum content, optimum layout, bar code density and quiet zones. The bar code label or mark must also meet ISO standards for verification, syntax and formatting, with all appropriate message formatting, within the message envelope, including the message header, compliance indicator, format trailers, separators and terminators. These marked items must also be registered with the UID Registry.

Because information systems must feed a common DoD Registry, the UID data elements must be clear and unambiguous when fed to the Registry. Four construct options plus many commercial variations that the DoD has accepted, allow different standards for expressing the data on a marked item in a bar code. For example, under Construct #1, the manufacturers' identification numbers and serialized number for a new part, a modified new part, an existing part, or a modified existing part may be expressed within a combination of the following forms:

¹ *Policy for Unique Identification (UID) of Tangible Items – New Equipment, Major Modifications and Re-procurements of Equipment and Spares

- ✓ Linear bar code in one, two or three message parts
- ✓ 2D bar code
- ✓ Human-readable text

In spite of the complex variations in marking allowed by the DoD policy, the Wide Area Work Flow system and UID Registry must receive this information in a rigid format composed of as many as 72 characters per UID, for each item reported.

This plethora of marking options will place a heavy burden on government contractors and suppliers required to perform this reporting task. Under the UID Policy, they will be required to mark and track more serialized components than in the past, and to report activity on these components more frequently.

A Familiar Analogy

To help comprehend the looming UID marking and tracking requirement, let's imagine a familiar setting, a trip to a large mass retailer we'll call Value-Mart. Visualize, if you will, purchasing a food item, a pharmacy item, an article of clothing, and a small appliance. If Value-Mart were operating under bar code rules such as those adopted by the DoD, each of those items, representing the food, pharmacy, apparel, and appliance sectors, would be marked via a 2-D bar code language, but with each mark containing the manufacturer's code and the product code from different code assignment authorities. Each item would contain a Data Matrix bar code and possibly additional linear bar codes and the linear bar code data may sometimes be in the Data Matrix code, but not always.

There is a practical reason for this variety of labeling formats. Right at the beginning of the supply chain, these manufacturers are complying with strict guidelines specified by their industries and by larger retailers. These guidelines, which include everything from data formatting to content, layout and syntax, are based on the nature of the product or item that is marked and the environment(s) to which it will be subjected.

When you roll your cart into the check-out lane at Value-Mart, every 2-D bar code on each item must be scanned in order to convert the machine readable language to human readable. Furthermore the checkers will need to be trained to scan thoroughly and properly for this information. Otherwise, accounting and replenishment data will be lost. The check-out computer would have to be far more complex than it is today in order to accept the data from so many different bar code formats. Of course, Value-Mart's enterprise information system would be much more complex, too, in order to accept and interpret the data.

Fortunately, America's huge, profit-driven mass retailers are unequivocally stringent in their bar code standards. They know that collecting precise data simply and quickly is the only way to hold costs down. Their computers are not trained or programmed to handle a variety of bar code standards containing data presented in complex ways. The Value-Mart scenario is imaginary; the dilemma facing government contractors today is real!

How The UID Mandate Affects Government Contractors and Suppliers

The UID is required now in order to do business with the DoD. This unequivocal statement is where simplicity ends.

Government contractors and suppliers are about to encounter a problem that was avoided by retailers who have adopted precise standard bar code markings. First, they must decide whether to utilize direct part marking or thermal transfer printed labels for generating UID data. Second, they must make sure the bar code label or mark, when created, is verified and validated. Then they must set up to collect the data for submission to the UID Registry. And finally, government contractors and suppliers must have a fail-safe method of reporting the data to the Registry so that they are in compliance 365 days a year.

When contractors report the status of their government furnished property (GFP), a UID will need to be created by the contractor for the GFP in their possession, using one of the numerous constructs. Each UID must reference a database that contains data on what the item is and where it is located.

After manufacturers have created a serialized UID at the time of manufacture for an item that is part of a complex system, they must report these integrated items into multiple product and system tables or databases linked in parent/child arrangements. Contractors will need to interpret the parent/child data correctly in order to populate the Registry.

Unlike the Value-Mart analogy, contractors and suppliers will incur higher costs in training their personnel to choose the most appropriate labeling standards within UID guidelines, and later when scanning appropriate data into the government's Wide Area Work Flow (WAWF) database and UID Registry. Contractors' ERP software may need to be modified to accept clear and unambiguous data elements when the data harvest is derived from multiple standards. In short, contractors are faced with a costly dilemma. One prominent contractor reports three man-years spent in the past 12 months just to develop limited label printing and verifying software for this new UID mandate, and that doesn't include electronic submission of data to the WAWF or UID Registry.

What Contractors and Suppliers Will Need

One answer for contractors is to outsource their UID compliance requirement to bar code experts who have developed a packaged UID solution. This would avoid a heavy investment in manpower, costs and time associated with understanding the complex mandate and then creating a timely and functional solution.

When UID outsourcing is chosen, this service must be designed to ensure that all steps in the UID compliance process are complete and that the process will hold up under operating practice. In other words, a packaged outsource solution must create and manage and archive UID data from "cradle to grave," and it must include every aspect of

compliance, from marking to reporting. That means that UID label generating software must comply with the MIL STD 130 (as modified from time to time) and also with the ISO/IEC 15434 standards. It must also drive direct part marking devices, where required, and it must support appropriate direct part marking readers and verifiers.

A packaged solution must also scan the labels, interpret the data, prompt users when further actions are required and finally interpret data for reporting to the WAWF and UID Registry. By DoD policy, the UID Registry must also be electronically informed of any changes in an item's location or status during that item's life cycle. This argues for an intelligent system that is designed and tested exclusively for UID compliance.

Furthermore contractors and suppliers will need software to generate properly formatted UID data, under the specifications of Construct #1 or Construct #2, for end items, sub-assembly parts and repairable spares. That data will be fed to labels that may require thermal transfer printing on durable polyester stock, capable of withstanding environmental extremes such as a broad temperature range, contact with caustic and eroding materials and the wear and tear of the battlefield. A typical label may be as small as .5 by 2.5 inches. The UID data may also be fed to direct part marking equipment such as laser etching or dot peening devices.

After end items, sub-assembly parts and spares have been marked, contractors must understand how to verify and register the data. To that end, an intelligent decoding system is needed that can scan any combination of UID labels permitted in the DoD policy, interpret the data contained in those labels, and prompt users for further barcode scans when necessary (This eliminates decision making from untrained personnel). In addition to validating the data for auditing purposes, this new "intelligent" data collection tool will also format the data for perfect flow back to the DoD's WAWF each time records are required.

Benefits of Outsourcing UID Data Management

The benefits of outsourcing UID compliance are many. For one thing, as noted above contractors save valuable resources and many man-years of learning and engineering when they decide to utilize a packaged UID solution. In effect, they are able to offload responsibility for managing data and hardware devices so that reporting to the UID Registry is always current. There is also the matter of continuing changes in standards. When a packaged solution is used, it is up to the solution provider to release newer software versions to accommodate those changes.

If outsourcing UID compliance is an option, contractors and suppliers should be certain that a packaged solution includes the following functionality: All legacy GFP data, including financial references, contract numbers, equipment location and counts, etc. that is currently stored in property management modules such as Oracle[®], Sunflower[®], PeopleSoft[®] and SAP[®] should be uploaded to the UID management system's HPC (handheld computer). When an event such as movement of property triggers the need for tracking, all bar codes, regardless of the chosen UID construct, are scanned. UID data



management software residing on the HPC should concatenate the UID data structures and initiate task driven events such as moves and inventory counts.

This concatenated information, whether for legacy or newly requisitioned GFP, should be downloaded into the contractors' property management modules when that is desirable. Furthermore, in order to comply with UID policy, the downloaded data must flow back to the Wide Area Work Flow Registry, thus satisfying policy requirements in compliance with GSA and FAR standards.

Action Plan For Contractors

In order to comply with the UID policy, A2B Tracking Solutions recommends the following steps:

1. Contact A2B Tracking Solutions for detailed product information regarding our compliance tools.
2. Become thoroughly familiar with the policy. This can be done most easily by following guidelines accessed through <http://www.acq.osd.mil/dpap/UID/>
3. Become familiar with Appendix B and Appendix C of the "Department of Defense Guide to Uniquely Identifying Items, Version 1.4".
4. Become familiar with "DFARS 252.211-7003 Defense Federal Acquisition Regulation Supplement".
5. Become familiar with guidelines for marking with the latest MIL STD 130.
6. Become familiar with "UID 101 The Basics".
7. Appoint a manager or "point" person to oversee UID policy compliance.
8. Flow down UID labeling requirements to your suppliers.
9. Continually reference our web site www.uidsoftware.com

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