



INTRODUCTION

Welcome to the UID Quarterly Fall 2005 edition, brought to you by A2B Tracking Solutions as an educational service. Our goal is to make UID compliance easier. In this edition we focus on the questions that we frequently hear from the field. Special emphasis is also given to the concerns of smaller businesses. We welcome your feedback, and if you find UID Quarterly helpful, we hope you'll forward it to your colleagues.

What you'll find in this issue:

New UID Solutions Website From A2B – We are pleased to announce the launch of our new UID Solutions website, www.UIDSolutions.com. At this site you will find the UID Solution Builder, an interactive tool where you make decisions regarding UID compliance preferences, based upon your particular needs. Submit these decisions with a click, and you'll immediately receive a personalized compliance report and recommendations. You can print and/or forward this report to others in your company.

UID SOLUTION BUILDER

UID Success - Melton Sales & Service of Bordentown, NJ has been doing business with the government, repairing specialized military equipment, industrial engines, and power train components, since 1949. That long history of contractor excellence won Melton the prestigious DoD Quality Excellence Award. Creating their UID "roadmap" meant reviewing and meeting Melton's unique challenges. Contract Administrator Ed Klusman tells how UID compliance was achieved quickly and economically.

Software Solutions - We review the UID requirement to submit data for legacy property and government furnished property in possession of contractors (PIPC) to the UID Registry. Two options are considered: reformatting data for an XML transmission on the one hand and the direct electronic transfer provided by UID Comply! software on the other.

Opinion - Tim Pastore, UID Products Specialist from Siemens Energy and Automation, formally RVSI Acuity CiMatrix, outlines some of the difficulties of UID verification, with the intent of taking some of the mystery out of the process. He also reviews the standards that impact UID compliance.

View From the Program Office - A2B President Peter Collins and UID Comply! user Ed Klusman, of Melton Sales & Service, will be featured speakers at the UID Forums being held this Fall. The forums are intended to provide practical UID compliance guidance, particularly to small and mid-sized contractors and non ACAT-1D acquisition programs.

Vendor's Corner - Telesis Technologies is our featured vendor this quarter. Peter Ginkel, Business Development Manager, provides an overview of permanent, computer-controlled marking technologies that fully comply with UID Business Rule 14 - dot peening and laser etching.



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MELTON SALES & SERVICE INC. CASE STUDY

Melton Sales & Service has been doing business with the government, repairing specialized military equipment, industrial engines, and power train components, since 1949. That long history of contractor excellence won Melton the prestigious DoD Quality Excellence Award. Ed Klusman, Melton's Contract Administrator, attributes the company's success as a DoD contractor to three key principles: quality, price, and delivery. "Some companies have large advertising budgets to sell their product," says Klusman, "but here our product and the quality of our work over the years speak for themselves." Since the DoD is Melton's primary customer, Ed stresses that adapting to the military's requirements in a timely manner is another essential part of establishing the best value to its customers.

When the Melton team first heard about UID, that philosophy led them to respond quickly and to become proactive in meeting UID compliance requirements, while simultaneously meeting many military and ISO standards. "What is UID and how does it apply to our operation, we wondered. It was confusing. We are not a manufacturer. We rebuild or re-manufacture equipment and diesel engines. We had many questions and needed to do some research," says Klusman, who leads the UID compliance effort.

The first step was to contact the DCMA, and they provided an informative UID slide presentation. Next he visited several web sites and reviewed additional material such as the DOD Guide to Uniquely Identifying Items, Unique Identification 101 The Basics, and a copy of MIL-STD-130L. "After reading this material we were still unclear about how UID would affect our company. Our current government forms supplier reported that UID is not supported in their software, so we decided to do some research on the Internet. We quickly found the A2B website"

Most of his team's questions were answered when they read about UID Comply!, the complete UID lifecycle management system, on the A2B site. Still they were concerned about the lead-time, training and cost of the solution, so they contacted A2B and made arrangements for an onsite demonstration. "After about an hour with A2B we were able to get a complete picture of the UID system and how it would support our business," says Ed.

A Smaller Business Solution

What the A2B representative found when he visited the Melton facility, in Bordentown, NJ, was an amazing array of heavy machinery in the process of overhaul and remanufacturing. He also found a highly professional company in need of guidance to negotiate the UID maze. Many decisions had to be made and many unique challenges addressed. Klusman wanted to continue to produce receiving reports and invoices via the WAWF web site. Melton was one of the first companies chosen to replace the paper DD250's in the Philadelphia region, and the process has worked well for them. The Internet version of WAWF allows a small company to work off-site or at multiple workstations without a huge mainframe or network.

"This is a typical scenario in smaller businesses," says A2B President Peter Collins. "Many companies do not have large numbers of UIDs, and therefore do not require the robust features available with the full version of UID Comply!, namely the ability to manage the complete UID life cycle by creating an audit trail for seamless integration of the entire UID compliance process. The UID Comply! life cycle management system is powerful enough for any manufacturer or large DOD contractor, yet due to its modular design it can be tailored to fit the needs of a small business. As a smaller business Melton chose the economical UID Comply! print and validate module, which fit their unique needs."

"We were very pleased to find a company like A2B that has produced a 'roadmap' to total compliance and yet was able to meet the particular needs of a smaller company," reports Klusman. "Our solution was to have the UID Comply! software create, print and validate the UID labels. Using a UID Comply! report function, we generate a report of the UID data to be used during creation of the WAWF document, which then sends the data to the UID Registry. This two-step process has enabled our company to attain compliance while reducing the total cost of the solution, which keeps us competitive in today's economy."

The UID “Roadmap” at Melton

Creating the UID “roadmap” meant reviewing and meeting Melton’s unique challenges. Their greatest challenge was the nature of their primary business. Unlike manufacturing, where large quantities of a single item are produced and assigned sequential serial numbers, Melton has to manage repair efforts for over 250 different stock numbers while juggling a mix of quantities. Instead of producing products in lots like manufactures do, Melton operates more like a job shop, with each item custom built according to a customer’s purchase order. That means each vehicle and each engine has a serial number recorded in the work order, so the Melton process must have the ability to accurately mark a single item, or in some cases multiple items, in varying quantities, according to production rates. In addition, they are always faced with emergency and surge requirements that may disrupt the planned flow. “We needed a system that was flexible enough to handle producing one UID today and fifty UIDs tomorrow. The UID Comply! system provided a solution to meet our demands,” says Klusman

Another challenge was deciding which UID marking to utilize (metal plate, etching, or label) and how to apply it. Of the three alternatives the label was the best choice for flexibility, but questions arose about the UID requirement for permanence throughout the life cycle. In the automotive industry labels may come into contact with grease, oils, cleaning solvents, and high temperatures so it was a prime concern that these labels would hold up. Klusman worked closely with Charles Mara, A2B’s labeling expert, who has extensive experience working with the “big three” automotive manufacturers in the application of various labels. Mara provided sample labels of different materials and ink combinations. After about a week of testing they found a label and ink combination that withstood rigorous testing to satisfy the need for permanence.

Still another challenge was identifying the items that needed to be marked and registered with the UID registry and the WAWF. Since the acquisition cost of many items Melton handles is over \$5,000, the initial process was simple. But the challenge was to determine applicability on the smaller items under \$5,000 by utilizing the DOD Decision Tree. In addition Melton has expanded its operation by selling new engines and accessory items, and many of those will require UID markings. Klusman says, “Even though there is a \$5,000 benchmark today, we believe that this number will be lowered in the future, and most all of our products will be impacted. Therefore we wanted a solution that would grow with our projections.”

UID Requires Teamwork

We hear it again and again: UID compliance requires planning and a team effort across company departments. At Melton the packaging department, with responsibility for applying the new UID labels to finished end items, was impacted most. In addition the purchasing and contract administration departments required training on the applicability of the UID requirements. And last but not least the quality control department was tasked with establishing internal procedures and with monitoring compliance and effectiveness. Once the planning and processes were completed, Melton was UID compliant within a day of installing the UID Comply! system.

Klusman says that the teamwork required for UID compliance success at Melton’s extends to A2B Tracking. “Besides having an outstanding product, technical support and service that back it up are equally important, and A2B has been there every step of the way.”

Advice for Smaller Business Contractors

What advice does Ed Klusman offer other small business contractors? “We learned a long time ago that when the weight of the paper is equal to the weight of the product you are ready to ship. Fortunately for us those days are over, and the government has streamlined the contracting process. We find that many companies bid on government contracts without reading the ‘fine print’ and then they cannot deliver. They say, ‘We didn’t know all that was required.’ Also, some companies procrastinate and wait until the last minute to comply with the contract requirements. There is a saying, When in Rome, do as the Romans. We also know that Rome wasn’t built in a day. The moral here is this: UID compliance just does not happen overnight, and if you want to do business with the DoD, you must be on top of the technology today and for the days to come.

SOFTWARE SOLUTIONS

Options for Submitting UID Data to the UID Registry

UID Policy requires that all UIDs be reported to the DoD by submitting the data to the UID Registry. This data submission may take place by inputting UID data into your current Wide Area Workflow (WAWF) data entry process. For the time being, any new procurement of end item deliverables may be submitted via the WAWF web site, by clicking the UID tab and entering the appropriate information. Accuracy is critical to a successful submission. A NASA study has shown that one in every 300 keystrokes is erroneous, so it is necessary to pay particular attention when entering data elements such as the concatenated human readable UID, the issuing agency code (IAC), and the construct type such as construct #1 or construct #2. The concatenated human readable UID, also called the UII, is the alphanumeric string of characters that is extracted from the bar code by scanning to decoding software.



Dealing with Legacy and Government Furnished Property in the Short Run

Legacy items and government furnished property in possession of contractors (PIPC) must be submitted directly to the UID Registry through a direct electronic submission or the UID Registry web site. A physical bar code mark is not required on legacy and GFP UIDs until a later date as defined by the rules stated in the UID Policy Guide v1.5. Instead virtual UIDs may be created and submitted to the UID Registry web site. Entering the UID data, virtual or not, should be self-explanatory. However, in the interest of accuracy and efficiency, direct electronic submission should be considered. Software that can quickly and accurately transfer data to the Registry soon pays for itself, especially when inevitable errors are rejected by the Registry.

Steps to Submitting UIDs for Government Property

Among the options for submitting data to the UID Registry one is to reformat the data in an XML transmission. To accomplish this a number of steps must be followed:

- Organize the data from your property database. Depending upon your database, you must be sure to properly export the data to a separate file for manipulation.
- Review the UID Registry schema. The most up-to-date UID Registry schema is version 3. This latest change includes parent/child or embedded data as well as custody data in support of GFP. Make sure that your external file from your property management database matches the elements required by the UID Registry, then convert that file to XML.
- Perform a submission directly to UID Test Registry. Once your database is formatted into a transferable XML document, you are ready to submit the document to the test registry.
- Adjust and change XML format to meet specific data format obligations. This will require a longer period of time since it requires a back and forth process with the UID Registry maintenance team.
- Submit the XML file directly to the UID Production Registry. Once the Test Registry has approved your database, you are ready to send the file directly to a VAN provider who is GEX certified and will ensure that your XML file makes it to the UID Registry FTP servers.
- Check the UID Registry web site. After submitting the XML file to your VAN provider, wait a day or so and then search for your UIDs using the UID Registry web site. At that point, you should see your UIDs!

A Streamlined Solution

A2B offers a seamless solution to solve this complex problem. The solution starts as a natural extension of UID Comply!™ as a UID lifecycle management software solution. The software allows the user to simply point and click the UIDs associated with the end item deliverables, GFP, or legacy items. These UIDs with associated data elements are sent to the Registry with a click of the mouse. The result is a highly accurate and seamless process that saves valuable time and the resources of your internal IT department.



OPINION:

*by Tim Pastore, UID Product Manager,
Siemens Energy and Automation,
formally RVSI Acuity CiMatrix*

Overview

One of the most forgotten and misunderstood parts of the UID process is the Data Matrix verification step. This is where the print quality of the Data Matrix on the substrate is checked against an industry standard and then graded. This is not done with a simple Data Matrix reader. A Data Matrix that is readable is not necessarily well-printed. In this article I would like to outline some of the difficulties of UID verification with the intent of taking some of the mystery out of the process.

The Standards

Whenever a measurement is made it is important to be sure that everyone is using the same scale. The same applies in Data Matrix. There are a number of international standards that address the uniformity of Data Matrix verification. ISO 16022, ISO 15415, and AS9132 are the standards that have been specified in the UID verification process. Before the change on December 20, 2004 to MIL-STD-130L (Change 1) the verification method was ISO 16022. After the change, verification involved two standards, AS9132 for laser marking, dot peen marking, and electrochemical etching and ISO 15415 for all other printing technologies.

These documents are under constant change and as I write this, we are waiting for the release of Mil Std 130 M with its changes and there is an ad hoc committee that is trying to build a universal direct part marking (DPM) standard that may be referenced in future versions of MIL-STD-130. Overall, the standards allow everyone to measure the same values and check the print quality before we send parts to the DoD.

The Challenges

With each of the specifications cited in the UID standards there are difficulties getting your good codes to pass the quality check. ISO 16022, although no longer referenced, may have been the letter of the law at the point that you won your contract with the DoD. This means that you have the option of using ISO 16022 or going to the latest specified verification method. Using ISO 16022 it is very difficult to pass when applied to direct part marks due to the very high contrast requirement.

AS9132 is a much better DPM standard but it too, has its issues. For example, the "module fill" parameter on laser marking is not indicative of normal laser marking, which tends to overprint by up to 20%. The standard only allows 5% overprinting and 40% underprinting. Underprinting, which is rarely seen in the normal setup of a laser, may now be required to create a passing mark.

Lastly, the ISO 15415 parameters of fixed pattern damage and modulation are very strict and tend to fail labels that are printed on shiny materials or over coated with a glossy film.

The Solutions

Each of these problems can be solved with the proper products, support, and information. Siemens Energy and Automation, formally RVSI Acuity CiMatrix, is the leader in UID problem solving. Our Symbology Research Center (SRC), the industry resource for DPM Data Matrix marking, exists to solve your marking issues and difficulties associated with AS9132. We have an in-house center of expertise for machine vision lighting to solve the consistency issues with each of the verification standards, including the fixed pattern damage and modulation issues with ISO 15415. Lastly, we have the most comprehensive line of UID Data Matrix verifiers and readers. For further information please contact us at 603-598-8400 or info@uidsupport.com



VIEW FROM THE PROGRAM OFFICE

The Office of the Under Secretary of Defense for Acquisition, Technology & Logistics, UID Program Office is sponsoring two events this Fall to help provide practical guidance to military program managers and DoD Contractors – particularly small to mid-sized contractors and non ACAT-1D acquisition programs.

The UID Forums are designed for personnel from military programs and DoD suppliers to ensure compliance with the UID Policy as required by the DoD Policy Memoranda and the issuance of the Final UID DFARS Rule (dated April 22, 2005).

For more information on the Forums go to <http://www.uidforum.com>.

Vendor's Corner

*by Peter Ginkel, Business Development Manager,
Telesis Technologies*

PERMANENT UID MARKING

The Department of Defense UID initiative stipulates many requirements but as far as part marking is concerned, Business Rule 14 of the Department of Defense Guide to Uniquely Identifying Items, Version 1.5, is the controlling regulation. It states:

“14. The UII component data elements, at a minimum, shall be contained in a Data Matrix ECC200 symbol, as required by MIL STD 130 L (or a later version). Data may be contained in other AIT media (e.g., contact memory buttons, linear bar codes, radio frequency identification, etc.) in addition to the Data Matrix. The physical marks that contain the UII-required elements shall remain legible until the item is destroyed.”

Let's analyze business Rule 14: “... at a minimum, shall be contained in a Data Matrix ECC200 symbol ...” Shall, in this instance, means that it is a requirement !

A Data Matrix ECC200 symbol is a checkerboard like barcode that encodes UID information in two dimensions as opposed to only in one dimension as in a conventional linear bar code. It was chosen because it is a compact, high information density barcode symbology. A typical Data Matrix symbol is:



Since the Data Matrix symbols need to be unique, they must be created by a computer controlled marking technology.

Still analyzing Rule 14: “The physical marks that contain the UII-required elements shall remain legible until the item is destroyed.”

The permanency requirement argues against non-permanent markings such as inks and paper labels. Since military equipment typically gets exposed to the elements, abrasion and corrosion, a permanent mark is required to satisfy Business Rule 14.

Two of the most permanent computer controlled marking technologies that fully comply with UID Business Rule 14 are Telesis Technologies' Dot Peen and Laser markers.

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(Vendor's Corner continued)

Dot Peen Marking: This computer controlled technology creates the Data Matrix by permanently indenting a series of microscopic dots into the surface of the part to be identified. The dots make up the Data Matrix checkerboard symbol. The dots are typically about 0.005" deep and about 0.015" in diameter. A dot peened UID Data Matrix is typically less than half an inch square.

Dot Peen marking is well proven, highly permanent and resists virtually all types of obliteration. It has successfully been employed for years in the aircraft jet engine industry for marking of internal engine parts such as turbine blades, resisting extreme heat, corrosion and abrasion.

Laser Marking: This computer controlled technology creates the UID Data Matrix by applying a focused laser beam to the part surface. A permanent color change occurs on most materials that is integral with the material surface. The Data Matrix mark strongly resists environmental attacks that would rapidly cause ink marks and labels to disappear. Laser marked Data Matrix symbols can be made extremely tiny but typically are about 3/8" square.

Telesis Technologies Dot Peen and Laser marking systems can easily be configured to UID mark virtually any part or component. They can easily be integrated into modern manufacturing operations and work smoothly with A2B's UID Comply!™ UID mark creation and reporting products.

Seamless UID computer controlled permanent marking and full UID compliance is assured.