



UID QUARTERLY: FALL 2008

INTRODUCTION

We welcome you to the UID Quarterly Fall 2008 Edition, brought to you by A2B Tracking Solutions as an educational service. In this issue you will find a great deal of practical and useful information. If you read each article carefully, we guarantee that your UID understanding will be enhanced.

What you'll find in this issue:

UID Success - This first-person interview with UID compliance specialist Sue Boulden of the Oldenburg Group Incorporated provides a cautionary tale of what can go wrong when a supplier recommends the wrong labeling technique.

UID Solutions - A2B takes you Back to Basics as we review the questions that must be addressed in a UID



Compliance Plan. There is a lot of good information here.

Vendor's Corner - Jeff Muster of Integrity Equipment Sales & Service LLC presents a clear and concise tutorial on the pros and cons of YAG and CO2 lasers.

UID Education - View a full schedule of UID Web Seminars, hosted by Data Capture Institute President and bar code pioneer David Collins.

News from A2B Tracking - Find out what has been going on at A2B.

UID SUCCESS:

Oldenburg Group Incorporated



The Company: OGI is a diversified industrial manufacturing company based in Milwaukee, WI. In 1987 OGI acquired Lake Shore, Inc., a company founded in 1858 that had evolved from a supplier of mining and shipboard cargo equipment into a world leader in defense and commercial markets. With 625 highly skilled employees in five US facilities, OGI is ISO 9001:2000 certified and manufactures a wide variety of defense products including a floating causeway system.

The Problem: A military contract for an OGI Causeway System required compliance with MIL-STD-130. Numerous items needed to be marked, serially managed, and registered with the IUID Registry, including items of widely differing materials that would be subjected to harsh and abrasive environments.

The Solution: In the end, OGI found the expertise, the software and the training they required from A2B Tracking Solutions. That solution was hard won however, after a false start with another UID vendor that triggered intensive DCMA oversight.

The Interview: A Cautionary Tale

Susan Boulden, OGI engineering assistant and UID compliance specialist, offered this interview in order to spare others the frustration and costly mistakes incurred from starting down the wrong path to UID.

Q: Which OGI contract called for UID, and which parts needed to be marked and registered?

A: It was an army contract for our floating causeway system, which is composed of several independently operated modules. The modules are moved and positioned with a powered warping tug and roll on, roll off discharge platforms are utilized.



We were required to register serially managed items valued at \$5,000 or more, along with their sub-assemblies, components and parts and other items per customer request. The contract was vague. It said to be in compliance with MIL-STD-130 and that was it. After talking with the customer we found that many of the items we needed to mark were truly unique: 20- to 40-foot containers, 4x12- 5x10- and 6x12-foot fenders, flexors, pallets, man-lift baskets, the RHIB boat including the outboard motor, generators, fire suppression units, anchors, lighthouse towers and

personnel shelters. There were definitely a wide variety of textures and materials.

Q: How did you become educated about UID?

A: I attended a UID Forum in Atlanta where I made some useful contacts. Getting started was challenging, partly due to the vagueness of the contract. I started my research on many websites. I must say it was overwhelming. The more I read, the more confused I became. I would open one standard and it would refer to what seemed like hundreds of other standards/documentation. I felt I was going in circles. Eventually I learned the importance of doing research before deciding on your supplier. That turned out to be the biggest part of my education.

Q: What steps did you take to begin your project?

A: The key was getting the right people involved - Project Program Manager Jeff Gregorich communicated with the customer and the Project Engineer Rick Shemanski helped to sort out the part numbers, serial numbers, specs and standards.

We had already placed safety plates on our equipment and thought that would be the perfect place for the Data Matrix UID label. We decided on Construct 2.

Q: I understand you had a false start to the project. What went wrong?

A: Through one of my resources, I was referred to a well known supplier for UID. They thought the best way to approach this was with polyester adhesive labels. We explained that our equipment would be exposed to harsh elements including sun, mud, salt water, cold, hot, etc. and that the life of the equipment can be 30 or more years. Their label supplier assured us his label would work and that it was in compliance with the MIL-STD-130.

Those labels arrived just in time. We had railcars loaded with equipment waiting to ship. Jeff, Rick and I bundled up and ventured out to the rail yard. I believe it was -11° with gusty winds. We were told this temperature would be fine for securing the labels, but they would need extra curing time. After a full day of placing the labels on our equipment, we felt great relief. At last, we felt, we were in compliance with our contract demands for UID. I had frostbite, but that was a small price to pay.

After four days our in-house DCMA (Defense Contract Management Association) representative inspected the labels. To our horror the labels flicked right off, with just a light scratch test. We really had a dilemma! The labels were not sticking; the customer and railroad were waiting for us to ship and we were being charged daily for the delay.

We immediately contacted our UID supplier who in turn setup a phone conference with the label supplier. We tried a few different labels and performed tests, but nothing

would stand up to our requirements. Their “guarantee” was that the labels would work and were in compliance with the MIL-STD-130, but we discovered they had never supplied these labels for lifetime expectancy beyond three years or for use in outdoor elements. It was extremely frustrating. All that research, back and forth, emails, phone conversations, time and money lost, and they wouldn’t back us up.

Q: Where did you turn for help?

A: We had no time to lose. I remembered talking to Peter Collins at the Atlanta Forum, so I called him. He listened intently to our dilemma, and then introduced me to A2B’s Brad Smith. We started working on solutions right then. His whole approach with our situation was significantly better than our first supplier. Brad was enthusiastic in helping and assured us that he and his colleagues would work with us to correct the situation.

Q: What changes were made in the project after working with A2B?

A: We found the value in working with a UID supplier that is an expert in the field and committed to finding a solution that works. We started by establishing a team. Brad set up webinars, and we worked together to find a remedy. We utilized A2B resources for testing. I shipped Brad our stainless steel safety plate, to which the UID mark would be applied. Brad had it tested with various adhesives. Meanwhile we performed simulation tests with tack welding and screws in-house at OGI plants. We had to be careful with screw placement and penetration when attaching the UID tags because our modules needed to be air-tight.

We concluded that the best product for our heavy equipment was small stainless steel plates that were screwed right onto the safety plates. We went with pre-drilled, anodized, stainless steel, Type 304 plates attached with washers and drive screws. The safety plates were already on a bump-out which gave us enough space to screw into without puncturing the modules. We shipped the pre-drilled plates to A2B, for UID marking. For other equipment we used a strong epoxy with a washer and tack screw. On equipment that could not be punctured and was stored out of the elements, we went with a very durable adhesive label. A2B also performed verification and validation of all the marks and supplied us with a Compliance Certification document.

By the time we had the plates we required, railcars of equipment had already shipped to Norfolk, VA. Our team followed and worked diligently for a full week attaching plates to the modules, containers and inventory within the containers. The end reward was passing the DCMA inspection. We handed them a copy of the Compliance Certification received from A2B, and OGI was finally in compliance.

Q: Where does the project stand at this point?

A: I believe Oldenburg Group Incorporated has met the requirements of MIL-STD-130. We have successfully attached all the labels to our first program and all labels

have been verified and validated. Once we have customer acceptance we will upload the data to the IUID Registry using our UID Comply!® software. We are also ready for new contracts as they come along.

UID SOLUTIONS:

UID – Back to Basics

As the DoD puts increasing pressure on the military services and contractors to comply with MIL-STD-130, there is greater confusion than ever about the proper handling of UID. While there are now numerous options on the market touting UID solutions, many of these handle only a part of the process, falling far short of a total compliance solution.

Start With a Plan

The first step in dealing with UID is to draw up a compliance plan that will serve as a guide for decision making. But even before making a plan it is important to step back and take a long view of the entire compliance process, and beyond. If you are already involved in some portion of a UID plan, you will want to take another look to make sure you have all the bases covered. It is extremely important in the planning stage to involve personnel from throughout your organization who will be impacted by compliance. We have seen many cases where a lack of planning or a lack of input from stakeholders has resulted in a waste of time, money and efficiency. Those who rush to a quick fix in order to satisfy partial UID requirements have become all too familiar with the old adage, “Act in haste; repent in leisure.”

Compliance Plan Questions

Your compliance plan should answer the following questions:

1. What needs to be marked? Policy states that serially managed, mission critical items with a value of \$5000 or more must be marked with a proper IUID and then registered with the IUID Registry. This not only includes the top level item, but also any subcomponents and spares. At the same time, the customer may also require you to mark items that do not meet this requirement. It is also important to look at all levels of items you are delivering to the DoD to determine how many items must be marked and registered.

2. How will a properly verified and validated mark be made and affixed? Once you decide what must be marked, you must decide upon the marking method. It is prudent to involve engineers in this decision, in order to ensure that labeling will not impact item performance. There are a wide variety of materials and technologies available for creating labels and plates, including direct



part marking. The latter requires a full engineering study to ensure it will not impact item integrity.

After the marking method has been decided, the next essential step is to determine how you will create the UID in terms of syntax, choosing between the acceptable UID formats, the most prevalent being Construct 1 or Construct 2. In the end you may use different syntaxes, but it is best practice to standardize on one within a group of items or parts.

You must also decide what data, if any, will accompany the 2D Data Matrix on the label or plate. Choices are human readable information or additional bar codes. Best practice is to put the elements that make up the UID on the plate in a readable format. This allows anyone looking at the plate and scanning the UID to ensure all the information is correct. There are several bar code generation software products that create UID label formats.

3. How will the data from the mark be handled? Now that you have decided what to mark and how to mark it, you must have a safeguard in place to check your data. This is the most difficult and also the most important part of any compliance plan. We find frequent mistakes including duplication of UIDs, registration errors, manual keystroke errors and improper syntax, to name a few.

For your UID plan to be failsafe, the most important single decision you can make is to have the proper data management software in place. Software that meets full compliance requirements drives the entire UID process. To draw an analogy, it is like buying a new car that has been manufactured from complimentary parts as opposed to trying to build one yourself, from a series of spare parts.

For example your UID data management system must be able to drive the multiple marking devices you use now and in the future, and to create files to send to label and plate shops where you may be outsourcing. Since you start with the data and then create the mark, a good data management system will take the item information and put it into the system to start the process. This will ensure that applicable data is good and used only once.

After the mark has been created, the data management system should allow for scanning to ensure proper validation and verification. Both are called out in Mil-STD-130 to ensure that the mark is created correctly, with the proper syntax.

The next step for which a good data management tool is essential is managing embedded relationships of

assemblies. Earlier, while deciding what to mark, you probably realized you need to mark more than just the top level or parent item. That means marking sub-components, sometimes down to the lowest repairable unit and associating those assemblies. UID compliance is not complete without the management of component relationships to parent items.

Finally, after UIDs are created, marked, verified, validated and managed, the data must be uploaded to the IUID Registry. Here again conforming UID data management software is invaluable as multiple errors are avoided and the process is streamlined. You can get on with other responsibilities, knowing that UID compliance is achieved now and in the future.

Plan to Avoid These Common Problems

At A2B we hear a lot of stories from those who have headed down the wrong path to UID. What follows are two typical scenarios.

Harry decided to purchase labels created by a print shop. This worked quite well because he needed a small set of a specific type of labels and plates. But soon some troubling questions arose: Who would manage the data to avoid duplicate numbers? Who would perform the validation and verification transactions? What if Harry didn't realize he had a problem with verification and validation until it was time to submit the data to the Registry? Who would take care of registering the items anyway? Who would gather all the information for each item and then hand key that data into the Registry or WAWF websites. In the event errors from the print process were undetected until registration, what would it cost to fix those errors on labels and plates that were already delivered to the customer? And what is the cost of fixing data entry errors in the Registry?

Daniel prints his own labels, but instead of using data management software he uses bar code creation software. This allows him to make nice labels and plates to mark the required items. But he found he had no backstop from creating labels that fail to meet syntax requirements.

What's more he had no means to avoid duplicate marks. Worst of all Daniel had no plan for registering the items. He could make thousands of labels but was faced with paying someone to manually enter all the appropriate data into the Registry website. Sure it was less costly to generate his own labels, but Harry spent far more on labor in four months than he eventually spent on data management software that took this burden from him and assured compliance.

Don't be penny wise and pound foolish

Without the integrity afforded by data management software, your UID compliance initiative is incomplete. Think of this up front as you build your compliance plan and design your own system. Don't be shortsighted with regard to cost. Harry and Daniel and many others have spent far more by attempting to save money. Piecing together a partial solution has backfired more often than it has succeeded. Do your research and go with a company that is knowledgeable about UID from beginning to end. And that includes keeping you up to date as UID policy changes and grows.

Quick Label and Plate Production Primer - Purchase Equipment vs. Outsource

Both methods have benefits and for many a combination of the two is probably the way to go. For the bulk of marking needs, purchasing equipment makes sense, because you gain the economic advantage of being able to create your own plates or labels. But, if you have low volume specialty marking needs, it is likely more cost effective to engage a label or plate shop.

There is an issue with general outsourcing of your mark creation, however. Label and plate shops, for the most part, will not manage your data, meaning that they are not checking for duplicates. Also, in spite of claims to the contrary, most are not equipped to validate or verify the marks and therefore cannot issue a certificate of UID compliance.

Whether you choose to purchase equipment or outsource the only way to safely manage the data is with UID data management software.

VENDOR'S CORNER:

When I began designing laser systems in 1985, there were basically two marking laser choices—Nd:YAG & CO2. Today we see CO2, Nd:YAG (standard, green and UV variants), Vanadate (Nd:YVO4) and Ytterbium (Yb) fiber lasers, but the truth is YAG can be used to group together "other than CO2". So after 23 years, YAG and CO2 are still the basic contenders.

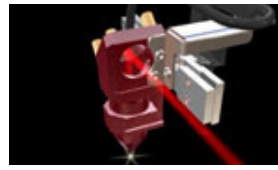
Deciding between YAG and CO2 boils down to the material you must engrave. CO2 lasers generate longer wavelength light, making them ideal for wood engraving, plastic etching,

glass marking and the removal of surface coatings such as anodized aluminum, ink/paint and UID label material.

YAG lasers also remove coatings to produce an image contrasting with the underlying surface, but in addition they can engrave bare metals and ceramics (producing depth). They also etch a wide array of plastics with more highly readable codes than CO2 lasers can.

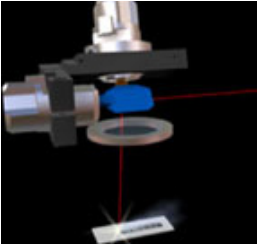
YAG is not typically used to engrave wood or glass because its shorter wavelength light passes through these materials without being absorbed. Laser light absorption is what produces an image on a part.

Bare metals can be marked with a CO2 laser using TherMark™ a compound that is permanently bonded to the base metal by the heat generated by the laser. TherMark can also be used with a YAG laser to mark glass, if necessary.



engraves more slowly, so a UID label using a galvo-laser that requires 20 seconds to engrave could take a minute to mark on a plotter-style laser.

Once the laser is chosen, a beam delivery must be selected as well. This is the option—when it comes to UID compliance—that will most greatly affect the price, functionality and ease of laser use. Again, there are two basic choices. One choice is a traditional galvo-steered delivery such as the SpeedMarker™ which is available in both YAG and CO2 versions and utilizes two turning mirrors to steer the beam to the



work-piece. A second choice is the newer, industrial, flying-optic, plotter-style delivery such as the FineMarker™ YAG, that economically provides large mark areas, (up to 17" x 29" for YAG & 51" x 51" for CO2).

The advantages of galvo-steered lasers are mark speed and ease of integration to automated assembly lines. The disadvantages of galvo-technology, small mark areas (typically 4" or 6" square), higher purchase prices and proprietary job-creation software often outweigh the faster mark speeds.

The plotter-style laser delivers a larger mark area at a lower price point. The downside is that a plotter-laser usually



Perhaps the greatest advantage of plotter lasers, in addition to larger mark areas and lower price, is that unlike typical galvo-lasers, plotter-lasers are in effect “printers” that the user can “print to” from most third-party software packages such as UID Comply!® making plotter-style lasers more user-friendly in most cases.

It all comes down to this: If you have a low-volume (hundreds of parts per day) UID requirement, such as marking anodized aluminum tags or label-stock per MIL-STD-130, then begin by considering a lower-cost, easy to use CO2 plotter-laser. On the other hand, if you need to direct part mark thousands of bare metal components per day, look in the direction of the plotter-style or galvo-steered YAG laser. Alternately you just may want to consider a system like the FineMarker Hybrid that contains both a YAG and a CO2 laser all in one.

Since 1985 Jeff Muster has held engineering, sales and company management positions in the laser industry. In 2007 he started Integrity Equipment Sales & Service LLC www.

EngraveParts.com in Manchester NH to better meet the laser and job-shop service needs of businesses located in New England. Jeff can be reached for consultation at (603) 247-3231 or via e-mail at Sales@EngraveParts.com

UID AND RFID EDUCATIONAL WEB SEMINARS:

In our quest to provide ongoing education to those who are implementing UID and RFID we offer the following two seminar series:



UID Web Seminars From Data Capture Institute

David Collins, President of Data Capture

Institute, has been engaged by A2B to present a series of UID Web Seminars as a non-commercial, educational service to those who are required to implement UID.

David is considered by many to be the “father of the bar code industry” having led the original bar code project, KarTrack, for Sylvania in 1969 and later founding Computer Identics Corp, the first company to manufacturer bar code scanners. Over

the years Collins and his team have overseen thousands of bar code installations around the world. He is author of the popular 1992 book, “Using Bar Code – Why It’s Taken Over” and is a frequent keynote speaker and automatic data collection seminar presenter. As a member of the UID integrated product team (IPT) he is uniquely qualified to respond to the questions and concerns of companies of all sizes, including large, multi-national enterprises as they grapple with UID implementation.

Upcoming UID Web Seminar Dates

(Presented each day at 2:00 Eastern)
Thursday, November 6
Tuesday, November 18
Thursday, December 4
Tuesday, December 16

To register for any of these dates, email pchasse@a2btracking.com or click on this link: http://www.uidsolutions.com/webinar_signup.aspx

NEWS FROM A2B TRACKING:

Latest Press Releases

10/22/2008 - Rhode Island Firm A2B Tracking Solutions Wins GSA Contract Award

Washington, DC – Congressman Patrick J. Kennedy (D-RI) and U.S. Senator Jack Reed (D-RI) announced today that Portsmouth-based A2B Tracking Solutions Inc. has been awarded a U.S. General Services Administration (GSA) contract, in support of the US Air Force, under the Department of Defense's Unique Identification (UID) program. The firm, which has already received its first three orders from the Air Force, has been awarded a contract to implement the UID systems and services for various DoD departments that is worth up to \$70 million...

10/20/2008 - A2B Founder Peter Collins Receives International Award Nomination

Portsmouth, RI – A2B Tracking Solutions' Founder and President Peter Collins has been nominated and short-listed for the ID People Leadership Award which will be presented at the ID World International Congress 2008 in Milan, Italy, in November. In addition, as an invited speaker at the event he has the opportunity to showcase the military's landmark UID policy, as required by MIL-STD-130, to this large, international audience...

A2B Featured

Zebra Technologies Case Study

Zebra and A2B teamed to provide a UID solution for JC Bramson Excavators LTD. Entire document available to download via UID Solutions website.



A2B Travels

Department of Defense Maintenance Symposium and Exhibition

October 27-30, 2008
Denver, Colorado, USA
Booth 335



ID World International Congress

18-20 November, 2008
Milan, Italy

