



**IUID**

Item Unique  
Identification

**Implementation of UID and RFID  
to Meet DoD Requirements  
Presents Many Unexpected Challenges**

**SilverLining Partners, LLC White Paper for the  
Unique Identification Policy Office**

**Silver** *Lining*  
**Partners** LLC



**SilverLining Partners, LLC is a privately owned SDVOB IT professional services company. Their lifecycle portfolio features technical audits, architecture and design, Unique Identification (UID), Radio Frequency Identification (RFID), and integration and support services, including computer and web-based training. After overseeing the integration of UID and RFID for a major Department of Defense (DoD) supplier, SilverLining Partners' Don Lawson shared his conclusions and lessons learned with the UID Policy Office in the following white paper, which captures some of the highlights of his experiences during the integration process.**

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Insertion of additional marking and tracking requirements to meet DoD UID and RFID tracking mandates into existing manufacturing processes can be an extraordinary challenge depending on factors that are not intuitively obvious when first confronted with the DoD obligations. The first reaction may be that it is just one, two, three, or in some cases four more labels that need to be added to the current process. If it were just a matter of physically adding labels to the process that would present minor and controllable adjustments.

The requirement to enter the data into a database and in some cases associate these labels to each other and to each order or contract while making sure that the process does not induce errors impairing the accuracy of the associations is yet another matter. In the unlikely situation the manufacturing process by itself can identify and correct the errors, the challenge is to have a means to stage the data collection for correction and validation before it is passed to Wide Area Workflow (WAWF). This function will most certainly be a new function to any company's workflow and system environment.

As the team that is assigned to implement the process comes to grips with the tasks that are required, it would be helpful to have some form of a checklist to make sure that all the important points are addressed.

### **First: Sizing Up the Task**

Undoubtedly as a government supplier, you will be facing a unique set of conditions that will affect the overall complexity of the project. Risk assessment and avoidance are necessary "first steps" to mitigate downstream issues. Some general guidelines as to how to approach the project are:

- ◆ Prepare a PowerPoint document illustrating the current process using pictures with annotations so that all levels within the company easily understand it. This document will be used to develop the new process and to display the impact of integration on current processes.
- ◆ Prepare a flow diagram document that identifies where data is obtained or collected from and who is the ultimate user of the data. This should be done in a spreadsheet format since many changes will be made to this document as the new requirements are identified. Note who will be entering the information and who will be the recipient of the information.
- ◆ Review the contract requirements to identify what is being requested of the company. Ensure new processes meet all requirements.
- ◆ Review the relevant government specifications that are referenced in the contract and identify which of the requirements are applicable to the contract.
- ◆ Identify the various types of resources that are required to participate in the project and assess if these resources are available within the company.
- ◆ Create a work breakdown structure of all identified tasks.

### **Second: Sorting Through the Many Choices**

SilverLining's past experience is that there are multiple choices for every step along the workflow path to having a working process. For instance, if the requirement is to include a UID marking on the part, there are over 100 identified ways that this can be accomplished.

Identification of the appropriate location in the process to carry out the data collection can be difficult. The software that will be used to collect and process the data may or may not be commercially available depending on the level of complexity of the requirements. One example may be a requirement to use middleware software to interface with WAWF to assist in the collection and submission of the data. Alternatively, the contractor may find that the WAWF web interface is sufficient.

The identification and proper evaluation of these choices is critical to the success of the project. Unless a company has the ability to evaluate all of the choices, they will have to rely on experienced system integrators to guide them to the correct assemblage of software and hardware to fit their requirement. Without a well-documented process, a company can expose itself to a higher level of risk to effectively work with an integrator.

### **Third: Make or Buy**

Every government supplier is going to be faced with the options of buying or making labels that are used in their process. SilverLining has found paper labels that are used on the packing material are best printed internally, but that Tessa labels for the UID and RFID tags for unit and case/pallet should initially be sourced to keep the process simpler. There may be situations where printing the RFID labels may make sense if the volume and location for the printing in the process make it easy to incorporate. Verification of the integrity of the RFID labels also needs to be factored into the process.

Even the simple task of printing labels has complications. Consider this example: When the printed labels that go on the outside of the packing material are generated (per MIL-STD-129P with Change 4), the data is derived from the same data that is on the UID label. The process of associating the packing label to the UIDs in a high-reliability manner is a design consideration all by itself.

### **Forth: Testing the Process**

It will be advantageous for any supplier to allow as much time as possible to wring out the bugs in the process. There will be bugs with the data gathering process and messaging of the data to align with contract data prior to submission to WAWF.

In the design of the process it should be a goal to eliminate as much human data entry as possible since experience has shown that numerous and unexpected errors will appear in the database. There should be error checking and range checking built into the process to catch as many errors as possible at the entry point. Even with the best of efforts, there will still be data errors that will have to be corrected prior to WAWF submissions.

One method to address the inevitable errors is to create a staging-table process to review and clean the data prior to the final submission into the database. This practice would not normally be considered but has been found to be essential to making the process work. This extra step could require an additional staff position in the worst case or an additional work effort for a process knowledgeable person.

What the supplier may not be prepared for is to set up a test bed to run any new software releases through. That said, it is challenging to simulate all the different processes from a test bed. If properly done, it should catch the major problems. To avoid system downtime, always plan maintenance windows to set up new software releases.

### **Finally: Going for the Money**

The final goal for a government supplier is to get paid. It will require the submission of all UID and RFID data that has been collected. The WAWF process requires that UIDs are submitted as part of the Material Inspection and Receiving Report. One of the new processes that suppliers may not be familiar with is the ASN, or Advanced Shipping Notification, which does exactly what the name indicates. For suppliers that have the requirement, the associations of RFIDs and UIDs must be submitted prior to the receipt of the shipment at the DoD centers.

The supplier may want to consider using middleware software to assist in the messaging of the data to the various data submission processes to WAWF. Since there are different data requirements going to different government databases, it would be advisable to have the assistance of a software package to make this process run smoother and more accurately.

The process of setting up a company to submit to WAWF should be given planned time to work through the approval process. The process can start only when the contractor has assembled some data that reflects actual orders. This, like everything else, may be problematic the first time done so expect debugging of the approval process to take place.

Keep in mind there are online e-learning courses offered to understand WAWF that can provide some basic assistance in the process. Familiarize yourself before jumping in.

### **Summary**

Suppliers may find their individual situation will make this process appear a low-risk event. However, there are enough potential complications that will cause the most unexpected problems to arise in the process for even the smallest of companies. If a supplier follows the suggested recommendations in this paper, the most problematic areas will be surfaced early in the project – providing time for resolution.

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