

SAP Solution Brief
SAP Solutions for RFID



RADIO FREQUENCY IDENTIFICATION IN AEROSPACE AND DEFENSE

Enabling Real-World Awareness with Unique Identification

Aerospace and defense companies must operate efficiently while adapting to changes in the marketplace – such as U.S. Department of Defense mandates. SAP® solutions for RFID enable companies to comply with Department of Defense requirements concerning radio frequency identification (RFID) and unique identification technologies and processes. The solutions also help you go beyond issues of compliance to increase the speed, efficiency, and visibility of process and asset management across the supply chain – improving technology ROI and the bottom line.

Businesses like yours operate in a unique environment characterized by global competition, mergers and acquisitions, and complex industrial alliances. Like your counterparts in other industries, aerospace and defense (A&D) companies are under pressure to optimize extended supply chain management and operations. But additional challenges exist in A&D – principally, the need to comply with U.S. Department of Defense (DoD) mandates to implement radio frequency identification (RFID) and unique identification (UID) processes, software, and hardware. Forward-looking companies are also deploying RFID and UID processes and technology to help them increase their speed and accuracy and improve customer service, while reducing the costs of their supply chain and asset management operations.

SAP® solutions for RFID not only can help address the immediate requirements of DoD mandates in this area, but can help your company go beyond compliance, enabling and promoting new ways of doing business and making your company more efficient and profitable.

Real-World Awareness

SAP solutions for RFID help A&D companies incorporate information from the physical world of assets, products, and people into the virtual world of transactions, business rules, and processes. The solutions integrate data with enterprise business processes to increase visibility, control, and responsiveness.

The SAP solutions enable your company to address broad industry trends, face the intense competition and tight margins endemic to the industry, gain better asset visibility, and improve the management of services outsourcing. You can take a revolutionary approach to auto-ID technology, controlling and tracking goods and items throughout the entire value chain – without disrupting current software functionality. You can implement a software architecture that encompasses current and future technologies, combined with a data architecture that allows you to manage massive amounts of information at a low total cost of ownership.

Compliance with DoD Mandates

The DoD has issued RFID and UID mandates to embrace serialization in both its logistics and asset management operations. Suppliers are required to place RFID tags in product packaging materials, including pallets, cases, and unit packs. In addition, suppliers must send advance shipping notices (ASNs) to the wide-area workflow or via electronic data interchange. This effort aims to streamline the DoD supply chain, improve logistics operations, and increase supply network visibility.

The DoD is also implementing its first UID program to improve asset management and accountability processes. The program is expected to enable the tracking of assets as they change custody and move across different systems, with the UID acting as a unique key to information about any piece of equipment, part, or component.

SAP solutions greatly facilitate compliance with both the RFID and UID mandates, providing an infrastructure that supports shipping and receiving processes in manufacturing plants, depots, and distribution centers. You can send ASNs to the wide-area workflow, enriched with RFID information reflecting the packing hierarchy of pallet, cases, unit packs, and items. Companies can generate unique item identifiers to be printed or etched to mark the items, and list them with the UID registry. The SAP solutions provide a flexible and agile infrastructure that allows suppliers to quickly achieve compliance with DoD regulations – along with serialization functionality that enables business processes throughout the supply chain.

Beyond Compliance

While regulatory compliance is an important driver, implementing RFID technology and UID processes can yield considerable benefits in daily operations.

Logistics Control and Automation

These business advantages encompass automation of receiving and shipping processes, reducing errors, lowering costs, and improving logistics operations. By capturing and processing RFID data at receiving docks, A&D companies can automatically compare goods expected – as stated in an ASN from the supplier or internal party – against goods that actually arrive. You can automatically validate materials, quantities, and even the condition of goods against a set of preconfigured business rules, and either post the goods receipt or raise an alert. Similarly, you can automate shipping processes, performing validations before posting goods-issue transactions. The solutions update inventory data to reflect production orders and goods movements, track and locate misplaced items, and automatically generate goods-movement transactions.

Asset Management

SAP solutions help you capture information about serialized objects – cases, pallets, assets, items – as they move across locations, increasing visibility into assets and processes throughout the enterprise. For example, a well-known manufacturer that leases expensive maintenance tools to airlines uses SAP solutions for RFID to decrease lease cycle times and reduce the number of tools in inventory. Logistics managers know which tools are available for use, where each tool is, and when the tool needs recalibration. The solutions can also route tools from one customer to another, saving trips to the depot, lowering costs, and maximizing asset utilization.

You can track reusable transport items such as crates, binds, and pallets – as well as their contents – throughout the shipping cycle. This allows you to prevent transport-item shortages that can paralyze the shipping process, as well as the overstocking of these key assets, which often occurs as companies hedge against potentially disastrous shortages.

You can also use the solutions to identify and dispose of so-called “bad actors,” parts that repeatedly fail during installation, inspection, and reinspection processes. This expensive cycle can be broken by tracking and registering parts that are uniquely serialized using UID processes. Bad actors can then be identified and eliminated much more quickly, saving labor hours, increasing efficiency and productivity, and lowering costs.

Process Monitoring

SAP solutions for RFID enable you to monitor the status of various processes, checking against expected milestones and benchmarks. Automated alerting functionality can notify relevant parties and trigger workflows or process modifications. For example, if a shipment carrying key materials is running late due to a mechanical truck failure, the driver can inform the recipient of this unforeseen event via short message service. The software can automatically modify the expected arrival of the shipment and the start time of production orders that require the goods in transit. Automation increases your responsiveness, making your operations more flexible and responsive to customers.

Anticounterfeiting and Protection Against Bogus Parts

A&D companies face a serious risk of counterfeit or diverted materials. You must work with a vast network that includes OEMs; aircraft operators; spare-parts brokers and distributors; and third-party maintenance, repair, and overhaul (MRO) service providers. With SAP solutions for RFID you can authenticate parts and reduce the number of incorrect or bogus parts entering the supply chain.

Authentication can be performed at different stages in the process – when taking receipt of the goods from suppliers or even when the goods are at other locations outside the company. The solutions can verify the authenticity of the electronic product code (EPC) or other number encoded in an RFID tag or bar code against a repository of the valid codes. A more advanced authentication can be performed by verifying an EPC or number with markings in the packaging such as holograms or color-shifting ink; the tag ID in the RFID tag; or the hierarchy of pallet, cases, and unit packs in a shipment. These associations are known only to the issuing entity and kept in the SAP object event repository and cannot be faked by malicious third parties.

RFID Across the Enterprise

Integrating RFID technology and mass serialization deeply into the enterprise enables A&D companies to gain a synchronous view of information across the network and provide product-centricity and tracking. The concept of the uniquely identified object enables the efficient customization of products and assets, and can transform how you think about and execute a range of core business processes, including the following:

- Manufacturing and packaging
- Inbound and outbound processing
- Returnable containers management
- MRO and service parts management
- Payment processing
- Return management
- Warranty management
- Expirations management

SAP solutions for RFID facilitate a host of processes across the enterprise, in addition to helping you adhere to mandates and regulations. You can integrate your operations, managing and connecting huge amounts of data and processes. You can improve customer service through collaboration and cooperation, increase efficiency through automation and responsiveness, and make a positive impact on technology ROI, profitability, compliance concerns – and the bottom line.

Find Out More

For more information about SAP solutions for RFID, please visit us online at www.sap.com/rfid or contact your SAP customer engagement manager.

Powered by SAP NetWeaver®

SAP solutions for RFID are powered by the SAP NetWeaver® platform. SAP NetWeaver unifies technology components into a single platform, allowing organizations to reduce IT complexity and obtain more business value from their IT investments. It provides the best way to integrate all systems running SAP or non-SAP software.

SAP NetWeaver also helps organizations align IT with their business. With SAP NetWeaver, organizations can compose and enhance business applications rapidly using enterprise services. As the foundation for enterprise service-oriented architecture (enterprise SOA), SAP NetWeaver allows organizations to evolve their current IT landscapes into a strategic environment that drives business change.