

RFID Solutions With ROI *Now* for Transportation, Automotive and Aerospace

Oracle and Intel, In Conjunction With Alien Technology, Deliver RFID Solutions That Fit Today, Flex For Tomorrow and Build Profitability

We'll Deploy RFID Someday...

There's little doubt about the potential of radio frequency identification (RFID) technology. Over the past five years, the benefits of automated asset tracking have been demonstrated in both high-profile mandates (such as those at Wal-Mart and the US Department of Defense) and numerous pilots by leading companies (such as Toyota, Federal Express and San Francisco International Airport, to name a few). Because lack of visibility of mobile assets costs enterprises billions of dollars every year, the use of RFID will continue to grow. (See *Business Impact of RFID in Transportation, Automotive and Aerospace*, on the next page.)

For many decision makers in the Transportation, Automotive and Aerospace industries, deploying RFID solutions is not question of "if" but "when." Many companies understand the potential improvements to business processes; and as RFID usage grows, RFID capability becomes a market or competitive requirement. The key issues with regard to moving forward with RFID solutions are "is it deployable yet?" and "does it have a return on investment (ROI)?"

- How do you construct a realistic business case for RFID?
- How do you architect solutions that fit existing infrastructure?
- How do you maintain flexibility and avoid proprietary solutions that limit future options?
- How do you deploy solutions without disrupting critical business processes?
- How do you mitigate risk?
- How do you manage the inherent complexity, both of the infrastructure and of the increased data stream that results?



...But Why Right Now?

Oracle and Intel have played leading roles in the development and maturation of RFID technologies and solutions. With support from Alien Technologies, both have participated in creating real-world RFID solutions that prove deployability and demonstrate solid ROIs. The companies combine this expertise to provide joint solutions that make now the time to deploy RFID – by helping to reduce the risk and accelerate ROI. Specifically, these are comprehensive, end-to-end enterprise solutions that:

- Are standards-based to maintain affordability, flexibility and extendibility;
- Integrate into existing systems;
- Reduce deployment risk and operational risk;

The Joint Customer Value Proposition from Intel, Alien Technology and Oracle

Unique value:

- Complete RFID enabled business and technology solutions
- Pre-configured, integrated, best-of-breed components

Unique results:

- Reduced price
- Faster time to benefit
- Less risk
- Robust global support and service
- One point of accountability

Intel

- Broad relationships with technology suppliers
- Reference architectures
- Real-world pilot projects and deep "hands-on" RFID experience
- Powerful, flexible core technologies

Alien Technology

- Reducing tag costs through innovative manufacturing process
- High-performance readers
- Professional services for application success

Oracle

- Industry- and business-based leader in software technologies
- Complete, pre-integrated technology foundation reduces cost and complexity
- Industry-leading services to provide strategic and tactical guidance

Intel, Alien Technology and Oracle have collaborated to deliver comprehensive RFID solutions that reduce risk and enhance ROI.

Business Impact of RFID in Transportation, Automotive and Aerospace

As more and more companies gain real-world experience with RFID, the true ROI becomes well understood. These include:

Increased productivity	<ul style="list-style-type: none">• Elimination of manual scanning processes.• Reduction in mis-entered data.• Real-time asset location and status information (availability, history and repair requirements).
Increased visibility	<ul style="list-style-type: none">• Greater visibility into WIP status.• Greater visibility into asset and shipment location.• Faster reaction to exceptions.
Reduced costs	<ul style="list-style-type: none">• Faster awareness of manufacturing problems.• Better supply chain visibility reduces number of mis-ordered items and erroneous shipments.• Increased inventory efficiency significantly reduces inventory carrying costs and increases available working capital.
Better responsiveness and decision making	<ul style="list-style-type: none">• Supply chains are connected to demand and respond much more quickly, resulting in fewer lost sales and lower inventories.• Adaptive processes adjust to changing market conditions and competitive threats.• Standards-compliant RFID solutions make it easier to integrate with trading partners' solutions and to collaborate.

- Convert RFID data into actionable business intelligence;
- Are built with proven components; and
- Are designed to accelerate time-to-solution and time-to-ROI.

Our combined expertise means that your solution is truly end-to-end and can support the five critical activities required for RFID success (see the figure *Managing RFID Data For Business Advantage* on the next page). The result is true business advantage: actionable data where you need it, when you need it. The combined strengths of Alien, Oracle and Intel make it possible.

Oracle: Turning RFID Data Into Actionable Business Advantage

The potential of RFID is only realized if RFID data is turned into a business advantage. Oracle provides a complete business insight solution – a consolidated infrastructure that unlocks the true value of operational and information assets – all delivered through a common interface that puts information in context and allows users to collaborate. This enables organizations to adapt quickly to changing market and operational dynamics and seize the initiative – creating sustainable competitive advantage.

Oracle offers Automotive, Transportation and Aerospace companies a complete portfolio of customer-proven middleware and data management applications that convert RFID data into business intelligence. With deep experience with both RFID and the vertical industries, Oracle eases the integration of your RFID solution into your enterprise IT fabric, reducing both cost and complexity. And an Oracle-based solution is extensible, allowing you to start small and then scale globally with the same Oracle platform. With an unmatched breadth of capabilities to manage and utilize RFID data, the Oracle portfolio includes:

RFID data management tools:

- **Sensor Edge Server***: as the central repository for sensor data, Sensor Edge Server manages devices and information to capture, manage, analyze and respond to sensor-based events happening in the enterprise.

- **BPEL Process Manager***: integrates RFID events and enables the development of data types, business processes and partner transactions.
- **Business Intelligence***: utilizes RFID data and familiar Oracle database tools to make better business decisions.

Enterprise infrastructure:

- **Fusion Middleware***: a portfolio of leading, standards-based and customer-proven software products – including Oracle Application Server 10g*, Oracle Business Intelligence 10g, Oracle Portal and Oracle Web Services Manager and Sensor Edge Server – that streamline and optimize business and IT operations while increasing the accuracy and timeliness of business decisions.
- **Database 10g***: the industry-leading database for performance, scalability, and reliability for OLTP, decision support and content management.

Tools for Transportation, Automotive and Aerospace applications:

- **Transportation Management***: by integrating and streamlining transportation planning, execution, freight payment and business process automation on a single application across all modes of transportation, Oracle Transportation Management delivers robust transportation planning and execution capabilities to shippers and third-party logistics providers.
- **Enterprise Asset Management (eAM*)**: an integrated tool that manages the comprehensive maintenance requirements of asset-intensive companies by creating management strategies which optimize equipment utilization and production capacity while lowering costs.
- **Complex Maintenance, Repair and Overhaul (cMRO*)**: a complete set of tools to increase the efficiency of complex maintenance operations, yielding lower costs, improved response times, increased service levels and faster asset turnaround times.

Alien Technology: RFID Readers and Tag Products

Alien Technology is an RFID products supplier focused strictly on RFID and delivering RFID products for supply chain effectiveness, efficiency and security. Founded in 1995, the company has been at the forefront of RFID developments and the design and delivery of UHF RFID system architectures and hardware devices, including ICs, controllers, RFID readers, antennas and tags.

Tag manufacturing: Focusing on the manufacturing of reliable, low-cost RFID tags, Alien offers a wide range of electronic product code (EPC)-compliant UHF solutions for pallet-, case- and item-level tagging. Through Alien's proprietary manufacturing process, Fluidic Self Assembly (FSA*) and High Speed Strap Attach Machine (HiSAM*) assembly technology, Alien can manufacture high-performance EPC Class 1 and Class 1 Gen 2 tags in high volumes at low cost.

Reader system capabilities: Alien provides an array of high-performance, flexible RFID readers that are software upgradeable to future protocols and designed for easy integration into overall RFID solutions and enterprise IT environments.

Solutions development: Alien's RFID Solutions Center Dayton is an advanced facility devoted entirely to the application of RFID technology. Open to enterprises, government agencies and their partners, the Center comprises 23,000 square feet of educational, R&D and real-world implementation resources designed to enable the global RFID community to tap the potential of RFID technology. Visitors to the RFID Solutions Center use equipment

and instruments to simulate – with existing or new partners – supply chain, logistics, security and retail conditions.

RFID Training: Since opening in 2002, the Alien RFID Academy has graduated more than 1,200 individuals representing over 600 companies. The RFID Academy operates in North America, Europe, Australia, New Zealand and Asia/Pacific. Taught by teams of experienced RFID Application Engineers, RFID Academy courses focus on delivering an intensive, hands-on educational experience addressing the real-life issues and challenges of implementing RFID.

Alien's experience in the Transportation, Automotive and Aerospace industries includes freight tracking, baggage handling, airport and freight terminal security, cold chain management and supply chain management. Alien specialists include those from Quatrotec, an integration services and project management firm focused on commercial aviation and other transportation markets and acquired by Alien in 2005.

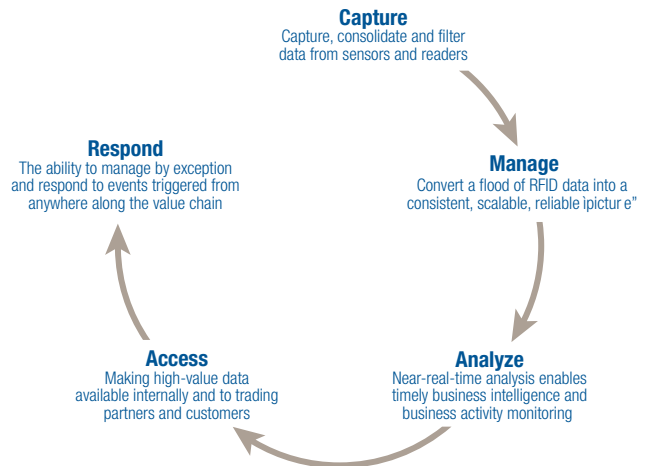


- **Manufacturing and Warehouse Management*:** a family of applications that uses a unified data model to provide a single, accurate view of your manufacturing process and warehouse operations, enabling you to optimize production capacity from raw materials through final product – regardless of manufacturing methodology.
- **Collaborative Planning*:** an Internet-based collaboration solution that rapidly and significantly improves supply chain performance by providing advanced capabilities for collaborative demand, supply and inventory planning with your supply chain partners.

Intel: The Powerful, Flexible Foundation

RFID increases the need for scalable, flexible infrastructure to capture and manage RFID data, run new applications and provide mobile information access. Intel's extensive experience with integrating RFID solutions and enterprise data architectures can accelerate your time-to-solution. Intel® building block technologies offer a powerful, cost-effective foundation for end-to-end RFID solutions that enhance business agility and reduce deployment time:

- Intel XScale® technology provides the embedded processing power for leading, cost-effective RFID readers such as the Alien Technology ALR 9800*.



Solutions from Intel and Oracle meet retail supply chain needs throughout the RFID lifecycle.

- Intel® Xeon® processor-based servers are flexible platforms to consolidate and filter data at the enterprise edge, as well as to run new applications that extract, analyze and present RFID data.
- Intel® Itanium® 2 processor-based servers and 64-bit Intel Xeon processor MP-based servers offer a choice of 64-bit architectures to handle demanding 64-bit and 32-bit databases and applications.
- PCs powered by the Intel® Pentium® 4 processor with Hyper-Threading Technology¹ enhance productivity with outstanding performance for desktop analysis and communication of results derived from RFID applications.
- Intel® Centrino® mobile technology-based notebooks and Intel® Mobile Media technology-based handheld devices improve productivity by enabling workers to access and act on RFID data and applications when and where they need it.

Intel invests billions of dollars annually in developing solutions to business problems, all with a strong focus on technology standards that enable wider customer choice. In addition to ongoing performance increases, Intel delivers value through platform technologies that enhance security, multitasking, mobility, manageability, reliability and flexibility. Intel's innovations in multi-core technology and other aspects of platform performance mean companies that base their RFID deployments on the Intel® architecture can count on technologies that protect their IT investments and keep pace with their evolving business needs.

Now Is The Time

In the Automotive, Transportation and Aerospace industries, the time to take action on RFID strategies is now. Solutions are maturing, real returns are being demonstrated, and the benefits of RFID technology are becoming a competitive necessity. Solutions from Oracle and Intel, integrated with Alien products, deliver on the promise of RFID – today. By leveraging our expertise, you can enable lower cost, increased productivity and enhanced customer satisfaction. Contact us to discuss your next step in RFID.

Oracle: Kevin Wilson, Director of Vertical Technology Solutions, kevin.wilson@oracle.com

Intel: Dick Bland, Director of Global Manufacturing Industry Strategy, dick.bland@intel.com

Or see our Web sites for more information:

www.alientechnology.com

www.oracle.com

www.intel.com/go/rfid

Solution provided by:



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¹Hyper-Threading Technology requires a computer system with an Intel® Pentium® 4 processor supporting HT Technology and a HT Technology enabled chipset, BIOS and operating system. Performance will vary depending on the specific hardware and software you use. See www.intel.com/homepage/land/hyperthreading_more.htm for additional information.

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