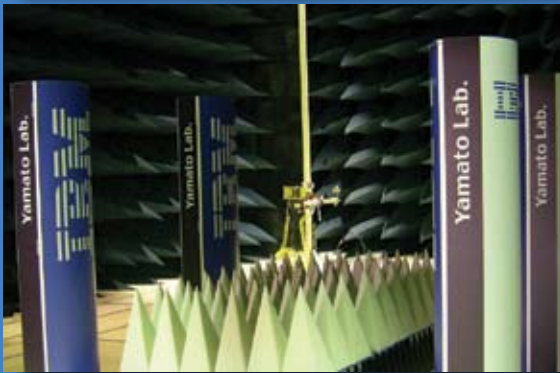


*RFID technology support
to implement your program and succeed*



RFID Solution Centers

*IBM solutions to transform business
with RFID and sensor-based
technology and expertise*

IBM RFID Solution Centers offer the following to clients and Business Partners:

- *Guidance and support to define an RFID solution investment roadmap*
- *Cumulative experience and assessments that help you integrate costs seamlessly and improve efficiency*
- *Capability to build on a flexible Service Oriented Architecture (SOA) foundation*
- *Expertise for integrating RFID technology into your operations*
- *Industry-specific, business process-oriented solutions*
- *Deep industry expertise to assist you in meeting your business and technology goals*
- *Strategically located global solution centers to address your business needs*

As business continues to evolve, there are few technological advances that will have as large an impact as radio frequency identification (RFID). Because it has proven to be an effective tool for businesses, RFID technology is quickly taking center stage in today's marketplace. Here are some reasons why.

RFID solutions help businesses reduce costs and increase operational efficiency and throughput. Because it provides improved accuracy for shipping, receiving and inventory movement, RFID can also reduce overage and shortage claims. In fact, retailers have cited an increase in sales from extended supply chain visibility and improved replenishment techniques. RFID technology can also help reduce shrinkage by delivering increased inventory control and visibility, and it can lower the cost of stock holding at all points in the supply chain. Finally, businesses have found that, as a result of RFID technology, employees are better aligned with processes and systems and are able to more effectively meet business objectives.

Providing the technical expertise to help meet RFID objectives

As you consider implementation of RFID technology, you need to define a strategy that will best leverage that technology to deliver the kind of returns on investment you desire. For this reason, IBM has 13 primary worldwide RFID Solution Centers that offer a combination of RFID technical expertise, practical assessment, implementation services, and industry-leading innovative solutions. Because IBM is

among the leaders in RFID solutions, our centers can help enhance your investment and make your implementations of RFID technology more efficient and cost-effective. In short, IBM can help your company stay ahead of the RFID evolution and take full advantage of this cost-saving, rapidly changing technology.

Helping you lower costs and evaluate technology

Understanding RFID is a good place to start. From the physics of this technology through to the value of implementing business process-oriented RFID solutions, IBM can help. Our centers provide a strategy to help reduce risk, lower cost and speed the time to your successful launch. We'll help you evaluate various technology providers and combinations of tag, fixed reader, handheld reader, printer, middleware and other technology components for performance and compatibility with your product lines. This means you can identify and resolve problems prior to investing in pilots and rollouts.

Identifying issues to help protect your revenue stream

The IBM centers can help you establish benchmark performance for your products with various individual technology components. They can help you project full system performance, analyze the effect on your network and IT environment, identify integration issues within both the wired and the wireless enterprise domain, and protect your revenue stream by being compliant to large customer mandates.

Offering benefits for specific industries

RFID technology provides many specific benefits to a wide range of businesses and organizations.

In the *retail industry*, RFID technology can help automate management of key business processes: product receipt/put-away, product expedition, inventory location/availability, out-of-stock, shrink, shelf-set, check-out and returns management. RFID technology can also provide out-of-stock triggers to prevent customer disappointment, obtain real-time supply/demand data, and enhance customer experience.

After deploying an RFID solution, retailers have seen:

- *Lower labor costs*
- *Reduced shrinkage*
- *Improved management of inventories (reduced out-of-stock and overage)*
- *Improved resiliency*
- *Additional complementary functions and features*

The *transportation industry* can benefit from RFID because it helps carriers accurately verify contract pricing and reduce claim costs. It can also help improve:

- *Asset utilization and tracking*
- *Volume planning*
- *Automated sorting*
- *Automated data capture*
- *Shipment route tracing*
- *Delivery reliability/efficiency*

RFID can help *manufacturers* comply with government regulations, reduce gray markets and theft, control labor and material costs, and streamline recall procedures. It can also help improve:

- *Quality control*
- *Lot tracking*
- *Inventory accuracy and visibility*
- *Asset control and utilization*
- *Contract manufacturing*
- *Supplier management*
- *Customer relations*
- *Supply chain management*
- *Warehouse management*
- *Inventory and parts management*
- *Shrinkage*
- *Shop floor execution*

Healthcare and pharmaceutical organizations can benefit from RFID technology by environmental monitoring of specimens such as blood samples, by anti-counterfeit measures, and by product recall procedures. RFID technology can also help:

- *Track hospital equipment*
- *Track patient identification*
- *Prevent medication errors*
- *Track prescriptions and samples*

In the *government sector*, RFID technology can help implement homeland security objectives by providing real-time access to mission-critical information that currently can be viewed only in remote regional and field locations.

Businesses can use RFID to incorporate business rules and system alerts based on customer order status and dwell time. This hierarchy of rules manages the processing of merchandise in accordance with its assigned status so that critical orders are processed before lower-priority units.

Providing RFID Solution Centers to help you achieve your goals

Each of the IBM worldwide RFID Solution Centers featured here has a core focus and area of specialization in order to help clients understand everything from the physics of the RFID core technology through to the value of implementing business process-oriented RFID-enabled solutions.

IBM RFID Solution Centers offer a combination of technical expertise, practical assessment and implementation services, and industry-leading innovative solutions.



Markham, Canada

Canadian RFID Centre

The Canadian centre specializes in the traceability of refrigerated and frozen consumer food products for retail and distribution clients. This centre was cofounded by IBM and industry associations and technology partners.

Demonstrations include:

- *RFID-enablement of frozen, fresh and dry goods traceability through a simulated supply chain*
- *Item-level POS self-checkout*
- *Active technology for asset tracking and location awareness and safety*
- *A hands-on environment for RFID and its business process impacts*

- *RFID testing facilities for retailers, CP manufacturers and other partners*
- *IBM and IBM Business Partner RFID solutions and offerings*

Facilities include:

- *5,000-square-foot centre that demonstrates business processes in a simulated supply chain, from supplier to distribution centre to retail store*
- *Executive briefing centre*

The experience enlightened the process, the vision, and the reality of RFID.

– Feedback from client session



Washington, D.C., U.S.A.

Institute for Electronic Government Briefing Center

The Washington, D.C., briefing center specializes in presentations for the public sector. Its purpose is to bring IBM thought leadership in the public sector to global government, education, and healthcare organizations. Perspectives on RFID utilization in the public sector are available from RFID subject matter experts as part of the programs delivered. Other areas of focus at this center include topics and solutions for defense; social services; first responders; customs, ports and borders; education; and healthcare.

Demonstrations include:

- *RFID supply chain solution*
- *RFID tagging devices*
- *Digital communities*
- *Government*
- *K-12 and higher education*
- *Healthcare*
- *Innovative technologies*
- *Security*

Facilities include:

- *Two executive briefing rooms (one classroom style for large groups)*
- *Two informal demo settings for group discussions*
- *Large demo area featuring 100+ leading-edge demonstrations*

Thank you for taking an interest in our mission of improving the performance of government, and for addressing our Fellows. It is with the assistance of wonderful partners like you that we can continue to provide the high-quality programs that the government has come to expect from us.

– U.S. client



Charlotte, North Carolina, U.S.A.

Wireless PilotCenter

The Charlotte center specializes in RFID-based IT asset tracking in working environments. IBM internal and commercial pilots are offered to validate business and architectural requirements. Low-cost/short-term hosted pilots are also available.

The center holds client briefings for business solutions; IBM hardware, software and services; and IBM Business Partner RFID hardware and applications.

Demonstrations include:

- *IT asset tracking and monitoring in a working data center*
- *Active and passive integration*
- *Variety of IBM and partner technologies including*
 - *IBM System x™ and System z™ server hardware*
 - *Active and passive RFID technology from Symbol, Multi-Spectral Systems, Ubisense, Cisco and AeroScout*

Facilities include:

- *850-square-foot raised-floor data center environment with VPN connectivity*
- *Pilot center in working environment*



Research Triangle Park, North Carolina, U.S.A.

Retail Executive Briefing and Innovation Center

The RTP Retail Executive Briefing and Innovation Center can elevate your briefing experience and move from an “educational” approach toward an “experiential” event. We will work with you to customize an event that will address your needs from a solution and business value perspective, highlighting both IBM capabilities and our large partner ecosystem.

The center hosts custom client briefings on solutions from IBM and IBM Business Partners. These include traditional retail and point of sale (POS), as well as multi-channel, merchandising, supply chain, business intelligence, and RFID. Although the center focuses on retail, briefings can also be structured for a variety of industries including banking, healthcare, communications, entertainment, and hospitality, to showcase the value of IBM retail innovation and what it can mean for other industries.

Demonstrations include:

- *Greeter scenarios that recognize badges and welcome customers as they approach an entry area*
- *Shelving for apparel and media and entertainment*

Facilities include:

- *Multi-demo facility focusing on retail*
- *Executive briefing center*
- *Videoconferencing*



Research Triangle Park, North Carolina, U.S.A.

Wireless Center of Excellence

This center's specialty is developing and demonstrating RFID solutions for multiple customer environments, such as high-speed conveyor systems, item-level RFID apparel, dock door portal testing, and location awareness technologies.

The center supports client engagements for RFID product testing, infrastructure and solution design, and pilot development.

Demonstrations include:

- *Supply chain management*
- *Pharmaceutical track and trace*
- *Location awareness and safety*
- *Inventory management*
- *IBM Business Partner technologies*

Facilities include:

- *40,000 square feet of operating warehouse space, with six dock doors*
- *Up to 650 feet/minute RFID-enabled loop conveyor system*
- *RFID-enabled dock doors and warehouse equipment: forklifts and pallet wrapper*
- *Real-time location systems using active RFID*
- *IEEE 802.11-based applications, including voice-over-wireless LAN*
- *Demonstration/technology lab*
- *Executive conference room*

The ability to see the technology and the applications that I would use in my production environment was very enlightening. This center is fascinating.

– CEO, pharmaceutical distribution company



Austin, Texas, U.S.A.

Solutions Experience Lab

The Austin center demonstrates RFID solutions that stimulate innovative thinking in real-world settings such as fleet optimization and pharmaceutical track and trace. Also included are supply chain, healthcare, and energy and utilities. Goals are to extend off-the-shelf IBM solutions and highlight IBM's unique brand and services capabilities.

The center participates in client briefings for IBM business solutions, IBM hardware, software and services, and IBM Business Partner RFID hardware and applications.

Demonstrations include:

- *Supply chain management*
- *Asset tracking in healthcare*
- *Pharmaceutical track and trace*
- *Fleet optimization*
- *Energies and utilities automation*
- *Smart surveillance solution*

Facilities include:

- *4,000 square feet of demonstration space with venues that include cafe, hospital room, distribution center, networks operations center, first responder vehicle, and more*
- *RFID-enabled receiving door and delivery vehicle*
- *IBM and partner technologies, including*
 - *IBM System x and System z server hardware*
 - *RFID technology from Motorola*
 - *GPS technology from WebTech Wireless*
 - *Healthcare technology from VeriChip and A&D Medical*
- *Software development lab*
- *Cameras to support remote tours of facility*
- *Executive briefing centers with 11 briefing rooms*

We were very impressed with the talent and solutions IBM has to offer. We are interested in working with IBM on numerous business development activities as a result of this initial meeting.

– Client response to briefing



Dallas, Texas, U.S.A.

RFID Global Solution Center

As the Sensor and Actuator Briefing Center for the Americas, the Dallas center specializes in complex solutions that translate technology into business value. Focus is on retail, consumer products, automotive, electronics and government sectors. Certified information technology architects and specialists representing a breadth of expertise are available to conduct briefings and workshops.

The center focuses on building industry business solution prototypes and providing pre-sales technical support for industry solutions. The center supports hosting RFID-oriented briefings for IBM business solutions, IBM hardware, software and services, and IBM Business Partner hardware and software.

Demonstrations include:

- *Inventory visibility*
- *Inventory replenishment*
- *Self-checkout*
- *Pharmaceutical track and trace*
- *Secure Trade Lane*
- *Work in process in manufacturing*
- *Security command and control for airports*

Facilities include:

- *Industry solution center*
- *Executive briefing center*
- *Classrooms*
- *Technology gallery*
- *A 15,000-square-foot solution lab*



Dublin, Ireland

Dublin RFID and Wireless Centre of Excellence

Located on the IBM Technology Campus, this centre specializes in solution development, implementation and consultancy services for wireless and RFID technologies.

The focus is on developing solutions that service asset tracking, data centre, and supply chain applications. The centre provides RFID test and demonstration facilities for IBM clients and includes the deployment of a live pilot for tracking mobile assets on a technology campus.

The centre is available for a variety of services including hosting client briefings, workshops and engagements; demonstrating IBM RFID technology capability and business value; delivering technical assessments, site surveys, prototypes and solution design (IBM site or client site); creating industry-aligned solution prototypes; RFID testing; evaluation of hardware and software technologies; and subject matter expertise and consultancy on RFID and wireless technologies.

Demonstrations include:

- *Mobile asset management solution and live pilot implementation on the Dublin campus*
- *Data centre solution and live pilot implementation on the Dublin campus*
- *IBM supply chain solution*
- *IBM location awareness and safety solution*
- *Microlise mobile logistics solution*
- *IBM/OAT Retail RFID logistics solution*
- *Motorola wireless networking solution*
- *Cisco wireless infrastructure with Real Time Location System*
- *Maximo solution*
- *Netbotz solution*

Facilities include:

- *2,500-square-foot RFID lab*
- *RFID client briefing centre*
- *Industry innovation centre for client demonstrations and workshops*



Hursley, U.K.

Emerging Technology Demo Lab and RFID Partner Centre

The Emerging Technology Demo Lab, IBM Hursley, focuses on the synergy between RFID and asset monitoring and Service Oriented Architecture (SOA) solutions.

The demo lab is suitable for introductory customer briefings and short workshops. Demonstrations extend basic RFID into asset monitoring scenarios, building management and asset security via RFID and video.

Demonstrations include:

- *Basic aspects of RFID*
- *Active and passive tags*
- *Asset tracking*
- *Vehicle and fleet management*
- *Environmental monitoring*
- *Digital video surveillance*
- *Data centre asset management and monitoring*

The RFID Partner Centre's specialty is helping partners develop and demonstrate solutions utilizing the IBM RFID infrastructure. The centre has full data centre capabilities, including RFID equipment auditing. Also supported are deployment and scalability testing for partner solutions.

Demonstrations include:

- *RFID infrastructure deployment with various reader hardware and tag vendors' equipment*
- *Active and passive RFID technology*

Facilities include:

- *Demonstration labs*
- *Classrooms*
- *Executive briefing centre*

Today's workshop by far topped anything else in terms of organization, content and location.

– Director, major insurance company



La Gaude, France

European Sensor and Actuator RFID Solutions Center

This center specializes in demonstrating the business value of industry solutions using end-to-end live prototypes, with deep architecture skills on hand to discuss technical implications. Showcased are a variety of RFID business and technical scenarios illustrating the importance of RFID architecture and the critical role of IBM RFID middleware integrated within a SOA foundation. The center is designed to help clients understand the value and implications of major technologies on their customers and to demonstrate IBM RFID deployment capabilities.

Live RFID solution prototypes are maintained including applications for consumer products, automotive, travel and transportation, chemical and petroleum, energy and utilities, telecoms, manufacturing, retail, healthcare and life sciences/pharmaceutical.

Demonstrations include:

- *Supply chain prototype and in-store RFID solutions*
- *End-to-end RFID traceability for pharma with EPCIS*
- *RFID asset-tracking prototype and RFID for data center*
- *RFID for location, awareness and safety and fully featured RFID hospital prototype*
- *RFID for WIP tracking*
- *Fleet management and monitoring, Secure Trade Lane*
- *Near field communication and real-time video monitoring*

Custom-tailored demonstrations in the Industry Solution Center include:

- *Distribution including supplier and retail warehouse*
- *Consumer's home, manufacturing environment, and doctor's office*
- *Business headquarter office environment and call center*

Facilities include:

- *15,000 square feet of client briefing and showcase areas*
- *European Industry Solution Center*
- *European SOA Leadership Center*
- *InnovationLand area featuring RFID solution demonstrations*
- *Videoconferencing*

The combination of deep knowledge and the spirit of innovation makes your center a unique differentiator.

– Client who attended sessions



Boeblingen, Germany

RFID Solution Deployment Center

This center specializes in the deployment of RFID technologies and in lab services for cross-industry customer engagements. Center capabilities include consulting and deployment services for RFID technologies during proofs of concept and pilot projects, and executing supply chain use cases under customer conditions.

Demonstrations include:

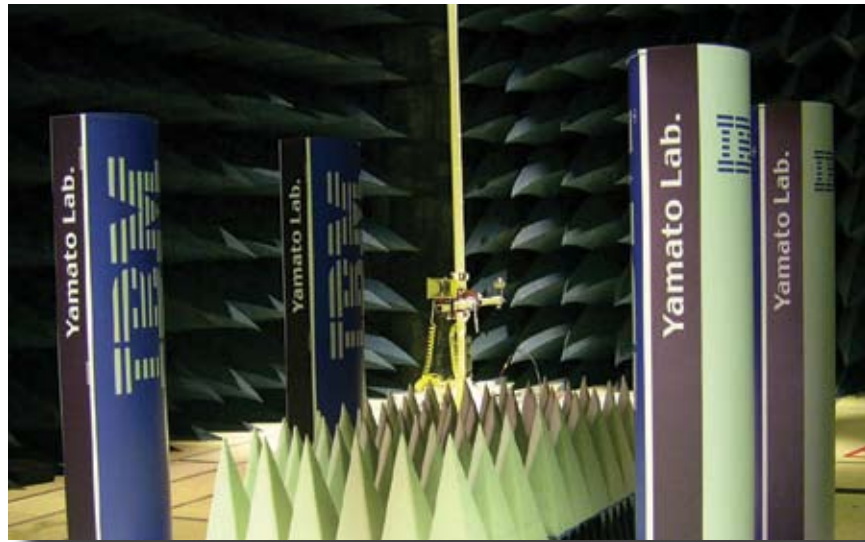
- *Distributed RFID Integrated Virtualization Environment (DRIVE)*
- *Location, awareness and safety*
- *Pharmaceutical track and trace*
- *Consumer-driven supply chain, inventory visibility and replenishment*

Facilities include:

- *RFID solution test lab*
- *RFID demo area*
- *Five executive briefing rooms*
- *Dining room for customer briefings*
- *Videoconferencing*

After one visit to the center, the client wanted to implement IBM RFID architecture and urgently asked for a proposal of our middleware.

– Large European client



Yamato, Japan

RFID Solution Center

The Yamato center's specialty is working with clients to understand the viability and applicability of RFID for their key business processes. The center has capabilities related to RFID technical consulting and pilot tests, design and development for RFID systems including wireless technologies and software, antenna design and electromagnetic wave simulation to enhance the performance and quality of RFID systems, and evaluation and solutions for electromagnetic interference by other radio frequency noise, obstacles of metal, liquid, humidity, etc.

Demonstrations include:

- *Location, awareness and safety*
- *RFID asset tracking prototype*
- *Basic aspects of RFID*

Facilities include:

- *Three executive conference rooms*
- *RFID solution test lab and radio wave anechoic chamber*
- *Simulation and evaluation tools for radio wave propagation*



Seoul, Korea

Ubiquitous Computing Lab Sensor and Actuator Solutions/RFID Solution Center

The Seoul center specializes in sensor and actuator and RFID solution enablement and working with clients to deploy IBM sensor and actuator and RFID solutions. Center capabilities include consulting for optimal technology selection to alleviate customer pain points incurred in current business processes and physical infrastructure.

Demonstrations include:

- *Distributed RFID Integrated Virtualization Environment (DRIVE), a framework for sensor and actuator/RFID solution life-cycle management*
- *Location, awareness and safety*
- *Pharmaceutical track and trace*
- *Consumer-driven supply chain, inventory visibility and replenishment*

Facilities Include:

- *VIP reception room*
- *Executive briefing center*
- *Demo area with RFID printer, readers, and real-time location systems using active RFID*
- *Nine classrooms*

We could see IBM thought leadership in sensor and actuator solutions.

– Large system integration company

Businesses have found that RFID solutions help better align employees with processes and systems within the supply chain and enable them to more effectively meet business objectives.

Choosing IBM to help you meet your objectives

In addition to RFID technology solution capabilities provided by IBM's 13 centers:

- *IBM has the vertical strength across a broad set of target industries, with particular strength in the financial services, industrial, distribution and public sectors.*
- *IBM has over 1,000 RFID practitioners worldwide and has conducted over 150 RFID technology solution engagements.*
- *“IBM is setting the pace – they’re actually out there co-inventing with the customers, and they’re leading the pack in RFID and sensor-based technology solutions.” (Michael Liard, ABI Research, October 2007)*
- *IBM On Demand Innovation Services bring IBM research together with IBM Business Consulting Services.*
- *“IBM middleware is on the leading edge in supporting and driving sensor-based technology and solutions.” (Mike Liard, ABI Research, October 2007)*
- *IBM has invested more than \$1 billion in wireless research and development and \$250 million in sensor and actuator technology development.*

IBM RFID Solution Centers offer a combination of technical expertise, practical assessment and implementation services, and industry-leading innovative solutions.

Businesses have found that RFID solutions help better align employees with processes and systems within the supply chain and enable them to more effectively meet business objectives.

Call on us

Learn more about how IBM can help you develop and implement business use cases. Let us help you define an overall RFID implementation plan that meets your unique business requirements. Please contact your IBM representative or visit us online at:

ibm.com/solutions/rfid

or at

ibm.com/solutions/sensors



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