

# INTECH's RFID Automation Improves Logistics Efficiency for a Global Leader



## Summary

A global logistics leader struggled with operational inefficiencies due to manual Radio Frequency Identification (RFID) request processes. The lack of automation at key points, especially at help desks, resulted in delays and poor visibility across operations.

INTECH's RFID automation solution streamlined these processes, reducing manual intervention and accelerating response times. This resulted in faster processing times, better operational transparency, and higher user satisfaction.

## About the Client

The client is a leading multinational headquartered in Dubai, known for its cutting-edge port and trade operations. Operating a vast global network across 40 countries and 57 terminals, they handle millions of cargo containers each year, making them a key player in global trade.

As their operations expanded, manual RFID processes caused delays and inefficiencies. This prompted the client to seek INTECH's expertise to optimize their RFID management system.

## Client Challenges: Manual RFID Communication Process

The client's RFID communication process was heavily reliant on manual handling of requests. Drivers had to visit help desks for RFID requests, causing bottlenecks and slowing down operations.

This manual approach, coupled with a lack of automation and real-time visibility, led to multiple challenges:

### Inefficient RFID Request Processing

The manual process consumed excessive resources and slowed down operations. With no automation in place, simple RFID requests turned into a lengthy task, causing daily bottlenecks.

### Limited RFID Management Capabilities

Truck details didn't link to RFID tags, making it difficult to track and manage requests. Users couldn't create or update RFID requests directly from the truck details page. Additionally, the lack of a structured workflow for internal teams to approve or reject requests further complicated the process.

### Lack of Automation in System Maintenance

Expired RFID requests resulted in outdated data, which created confusion within the system. Without real-time updates to the RFID Autogate logs, operational efficiency was compromised. Moreover, the existing system didn't notify users about defective RFID tags, which led to unexpected disruptions in operations.

These challenges caused inefficiencies and slowed productivity, prompting the client to seek an automated RFID management solution.

## INTECH's Solution: RFID Automation & Real-Time Tracking

INTECH built a modern RFID management system with smart automation. The solution streamlined operations, minimized manual effort, and improved real-time tracking.

Here are the key features:

### RFID Request Service Integration

- ▶ We added a new RFID request menu to the Dubai Trade portal. This allows hauliers and the internal team to create and manage RFID requests directly from the portal, eliminating the need for help desk visits.

### Truck Registration Enhancements

- ▶ INTECH integrated RFID request functionality directly into the truck registration system. This enabled users to create RFID requests directly from the Truck Details page, streamlining the process.
- ▶ We also integrated RFID tag replacement and real-time status updates to improve tracking, ensuring seamless updates and better visibility.

### Schedulers Implementation

- ▶ INTECH introduced automated schedulers to handle RFID request expirations. These schedulers sync RFID autogate logs and notify users of faulty tags, reducing manual effort and ensuring data consistency.

With the solution designed, INTECH moved forward with a tailored implementation process.

## Implementation Process

The solution was implemented in key phases to ensure smooth integration and minimal disruption:

- 1 Discovery & Process Mapping**  
Our team analyzed the client's existing manual workflows, identifying bottlenecks and automation opportunities. We mapped out each step of the process to fully understand the logistics operations and design a tailored solution.
- 2 Custom Development**  
We focused on developing a custom solution to integrate RFID request management into the Dubai trade portal and improve the truck registration process. We also added automated schedulers to handle RFID request expirations, sync autogate logs, and notify users about faulty tags.
- 3 Integration & Testing**  
INTECH worked closely with the client's team to ensure a seamless system. We conducted thorough testing to verify system functionality. This testing helped us identify potential issues early, ensuring real-time synchronization and flawless operation across all systems.
- 4 Deployment & Monitoring**  
We deployed the solution in phases, starting with a pilot to ensure stability. This approach allowed us to monitor the system's performance in real-time and make adjustments before scaling.

Ongoing monitoring ensured the system's reliability and efficiency post-deployment.

With ongoing support, we ensure the client is confident in the solution's sustainability. This results in measurable improvements in operational efficiency.

## Business Impact

INTECH's RFID automation revolutionizes the client's logistics operations, streamlining workflows for greater efficiency.

Here's the business impact:

**Improve Efficiency:** RFID automation replaces the manual request process, significantly reducing processing times.

**Enhance Visibility:** RFID automation provides real-time updates for tag and request statuses, improving operational transparency and accuracy.

**Increase User Satisfaction:** RFID automation gives hauliers easy access to services, reducing reliance on help desks and streamlining operations.

To achieve these business impacts, we used the right set of tools and technologies.

## Tools and Technologies Used

INTECH used advanced tools and technologies to create a scalable RFID automation solution, ensuring seamless integration and real-time performance.

- 🔧 **Java 8:** Used as the backend framework to support complex automation tasks and ensure efficient performance to make the solution scalable and responsive.

- ★ **Spring MVC:** Helped in building the application's infrastructure, ensuring a seamless and scalable environment for the RFID services.
- ★ **JSP (JavaServer Pages):** Generated dynamic web pages on the frontend, providing real-time updates and notifications for users.
- ★ **Oracle and SQL Server:** To manage data storage and retrieval, supporting real-time synchronization. They enabled seamless data flow across the system.
- ★ **FedEx API Integration:** Enabled real-time tracking and RFID label generation, improving the accuracy and efficiency of logistics operations.