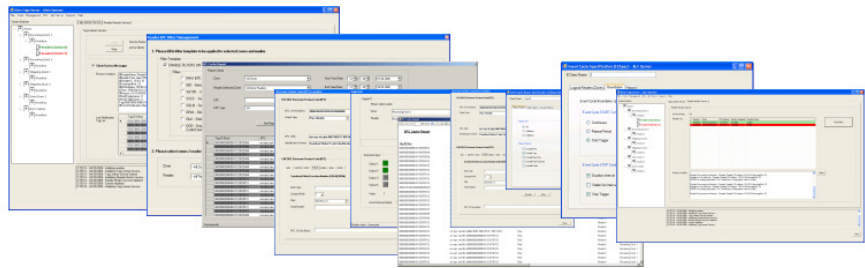


# Alvin RFID Edge Server

## RFID Device Infrastructure Management and Electronic Product Code (EPC) Platform



### Overview

Radio Frequency Identification (RFID) technology, Electronic Product Code (EPC) and EPCglobal network are fundamentally transforming the way business processes are conducted.

Alvin RFID Edge Server is the foundation platform for RFID/EPC enabled operations throughout your organization – regardless of your industry and business model.

Alvin RFID Edge Server provides a comprehensive software middleware platform that manages RFID infrastructure - readers, portals, sensors and other devices - deployed at the edge of your enterprise and provides standards based Electronic Product Code (EPC) solutions platform.

The Edge Server handles all complex interactions with your RFID infrastructure;

- Receiving, processing, filtering and aggregating low-level RFID data from RFID readers
- Executing automatic local business workflows
- Delivering filtered and aggregated data to enterprise applications
- Providing centralized administration, monitoring and management of RFID device infrastructure
- Standards-based platform on EPCglobal, ISO and other RFID standards

Alvin RFID Edge Server provides a plug-and-play solutions platform to RFID enable your operations and supply chain, increase automation and visibility, and meet retailer/government mandates – from a small pilot implementation to enterprise-wide deployment.

### RFID Device Infrastructure Management

Alvin RFID Edge Server provides a central point of administration for your RFID infrastructure, including RFID readers, portals, printers, stack lights, sensors and digital I/O devices.

Alvin RFID Edge server is a reader-agnostic middleware platform and supports all leading RFID hardware platforms via reader adapters- not only UHF platforms but also HF, active long-range and sensor enabled RFID platforms.

The administration console lets operations staff add, group, configure and monitor readers in real time. The edge server provides up/down status of all RFID readers and sends alerts in the event of device malfunction.

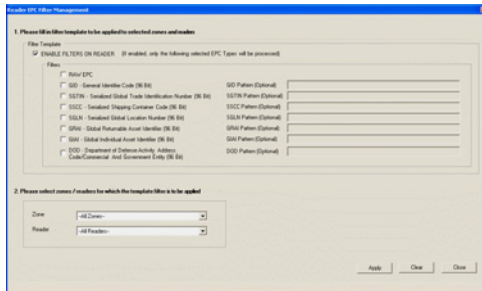
Detailed reader settings can be configured from administration console, controlling all aspects of RFID readers from RF settings to I/O configurations. Reader configuration profiles can be saved and exported in XML, and applied to other individual or group of RFID readers enabling easy deployment and management.





## Data Processing and Filtering

RFID readers continuously generate low-level and device specific raw data. Alvin RFID Edge Server receives, processes, manages, filters and aggregates data generated by edge RFID infrastructure as well as execute local workflows that are triggered by tag observations.

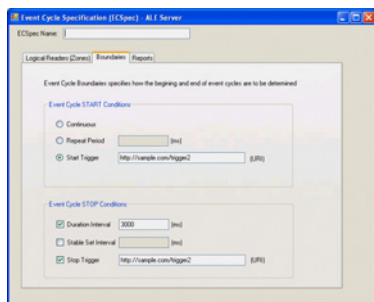


The Edge Server enables applying filters on individual or group of readers in order process only desired EPC types. The filters can be defined for GS1 Identification schemes (SGTIN, SSCC...), EPC Grouping/Filtering patterns or custom definitions. For example, filters can be applied to a receiving dock door RFID portal to process only EPCs encoded with SSCC identifier type and a particular manufacturer identifier.

## Application Level Events (ALE)

ALE is an EPCglobal standard that defines a declarative interface through which enterprise or higher-level applications request and obtain filtered RFID event data in a standard format.

High-level applications specify which data they are interested in, in what format, from which logical readers and at what intervals. Alvin ALE Server engine – with its ALE compliant API and SOA platform - processes all client requests and return reports to interested parties in an ALE compliant format over HTTP, TCP, FTP or Web services protocols. Besides powerful and standards-based ALE Service, Alvin RFID Edge Server provides intuitive UI interface for designing Event Cycle Specifications (ECSpec), Reports (ECReportspec) – and powerful ALE Service management features.



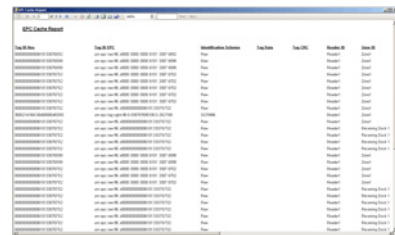
## Integration with Enterprise Systems

The ultimate benefit in deploying an RFID architecture lies in its integration with enterprise information systems and existing processes.

Alvin RFID Edge Server offers simple yet powerful architecture for all of your data and process integration needs, providing capabilities for standards-based or custom Integration with enterprise systems and trading partners.

Specifically architected on open-standards and service oriented architecture (SOA), Alvin RFID Edge Server supports even the most complex integrations by leveraging its ALE service, web services interface, database cache, local workflow execution engine, or custom modules providing support for developing custom integration logic over any transport protocol and IT architecture.

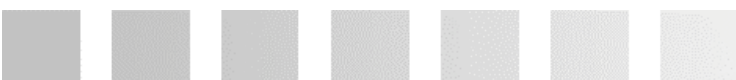
Besides direct integration with enterprise systems, Alvin RFID Edge Server also supports integration with intermediary data collection platforms such as SAP Auto-ID platform over ALE service or custom XML-based protocols.



## Local Workflows

Alvin RFID Edge Server provides complete support for designing, developing and executing custom local workflows at the edge of your enterprise. Local workflows are specific packages of custom business logic executed locally upon individual RFID tag observations in your operations. For example, upon observation of an RFID-tagged item traveling on a conveyor belt, detailed information can be queried from enterprise applications, stack-light and visual displays can be interacted and PLC/IO/Automation systems can be controlled accordingly with respect to observed object and custom business workflow design.

Alvin RFID Edge Server enables custom workflow design and development in Microsoft Visual Studio.NET as well as in other platforms- offering the utmost flexibility and easy-of-development for even the most complicated local workflows.



## Integration with Alvin RFID Portal Solution

Alvin RFID Portal solution is a pre-assembled and plug-and-play RFID portal controller solution that incorporates an RFID reader, I/O electronics, visual/audible signals, motion sensors and other equipment all enclosed in a ready-to-deploy rugged box.



Alvin RFID Edge Server integrates seamlessly with Alvin RFID Portal Solution offering a complete software-hardware solution from a single solution provider.

This proven and powerful combination uniquely makes it possible to cost-effectively deploy full-featured RFID deployments within hours without requiring costly custom development and installation.

## Technical Architecture

Alvin RFID Edge Server - built on a flexible and scalable foundation – offers a future-proof architecture for meeting ever-evolving business and technical requirements.

Built on Microsoft .NET 2.0 platform, Alvin RFID Edge Server supports multitude platforms – from embedded systems to 64 bit high-performance servers - and enables you to reap the benefits of easy management as well as seamless integration with SQL Server 2005, Office, Visual Studio, Biztalk and other platforms over standards-based Service Oriented Architecture (SOA).

Specifically designed to scale gracefully from a small pilot-project to the most demanding enterprise-wide deployments, and with its modular and standards-based approach, Alvin RFID Edge Server seamlessly supports evolving RFID/EPC deployments with a low total cost of ownership.

