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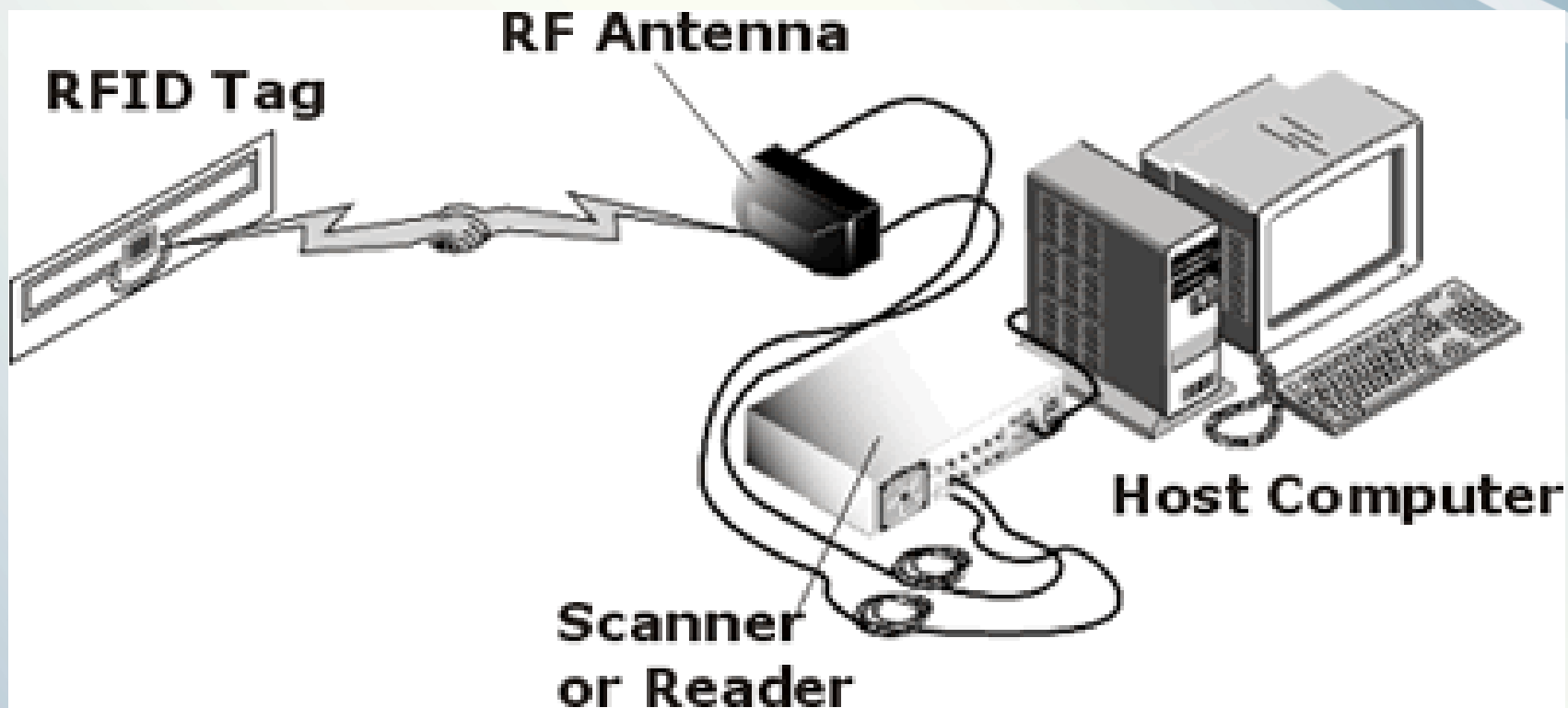


Introduction

- Who is Pramari?
 - Leading US Based RFID Software and Consulting Company
 - Member of EPCGlobal (Standards Group for RFID)
 - Partnered with leading Software Providers (IBM, Oracle)
 - Leading Hardware Partners (AWID, Alien, Identec, TagSource)
 - Real Project Implementations (Gillette, GE, UTC, Kronos)
- About Prasith
 - RFID Veteran with over 7 years in RFID field
 - Architect of earliest EPC RFID implementations and middleware
 - Member of EPC Global Committees for software standards
 - Subject Matter Expert and Exam Reviewer for RFID Certification Exam

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RFID System Components



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RFID Event Processing Scale

	Readers per facility	Tag reads/second	Bytes/ day (raw)	Events Per Second (with 90% filtering on middleware)*
Pilot "slap & ship" compliance	10	1	1 MB (106)	1 EPS
Distribution center - entry/exit visibility	200	103	1 GB (109)	1,100 EPS
Distribution center or retail back room (full visibility)	1000	105	100 GB (1011)	115,000 EPS
Retail floor (full visibility)	10,000	106	1 TB (1012)	1.15 million EPS

What do I do with the data?

- Automate aspects of existing functions
 - Data capture
 - E.g. Receiving, Shipping, Picking
- Reporting product movement
 - New levels of visibility between trading partners
- New business processes
 - Genealogy
 - Product Authentication
 - Case Locating

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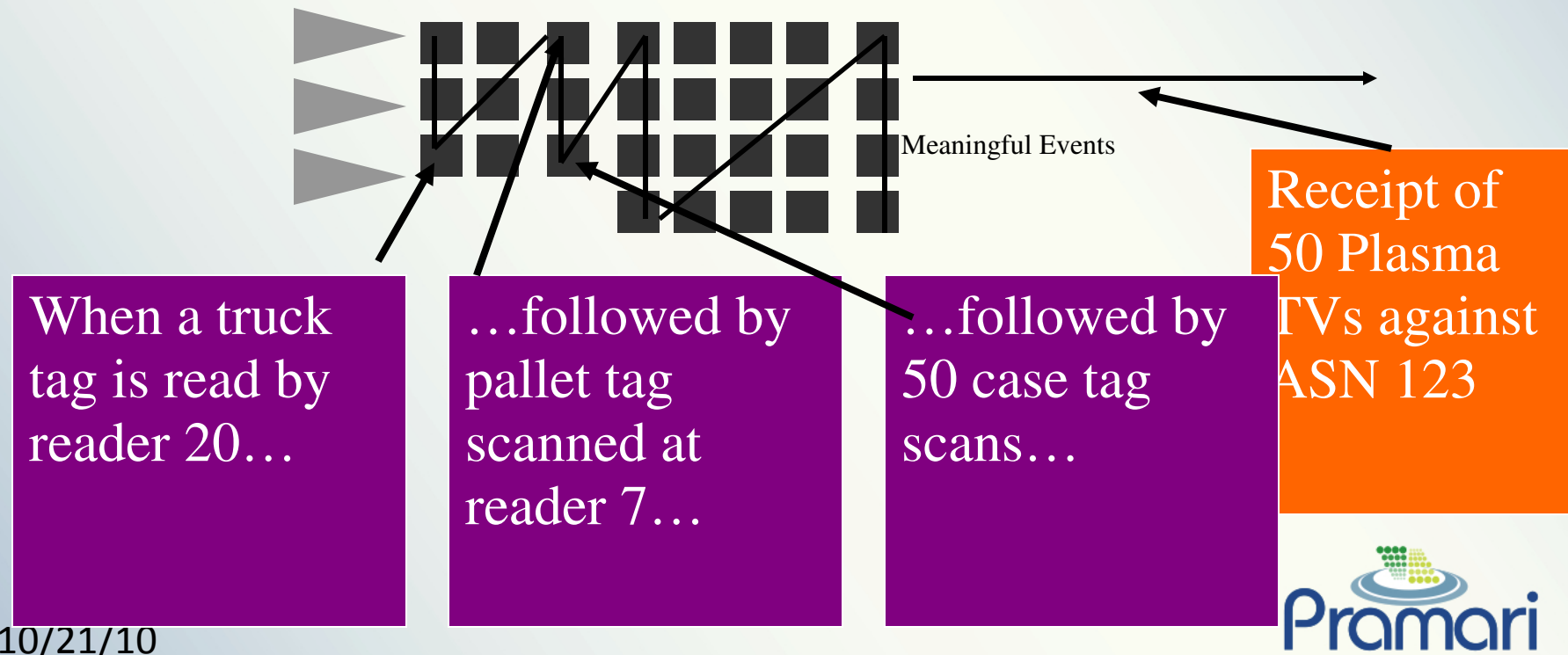


Digest Data Close to the Source

Main Principle: Turn Simple Events into Meaningful Events

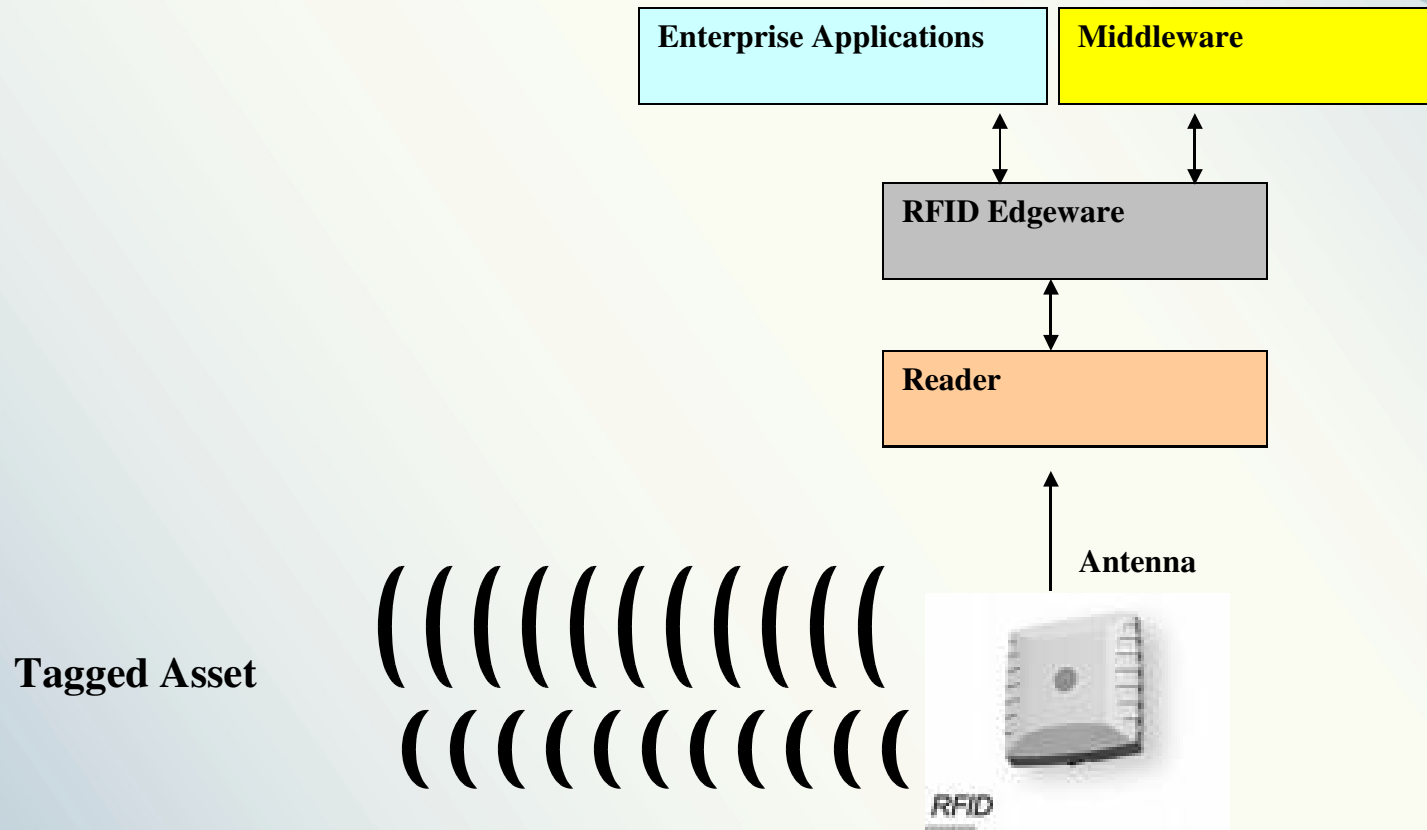
Simple Events

Complex Event Query Meaningful Events



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RFID System Block Diagram



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Roles of Middleware

- Filtering and collection
- Data communication
- Integration
 - EPCglobal standards
 - ALE
 - ERP Systems

“Edgware make sense of the immense data stream that is RFID”

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Open Source - Concepts

- Open Source (OSS) is community built software – It offers the ability for user's to directly interact with developers and also let's them become developers too.
- Open Source code has an inherent QA process. Developers take more care before releasing code and anyone is free to try to identify flaws in the code
- Open Source allows an unparalleled level of customization and also allows you the user to modify the code to your needs if the community can't
- Many different forms of licensing but all allow the ability to get free, open code and also modify it for internal use.

OSS Benefits to RFID

- Most current and prospective RFID users agree that the following barriers make RFID a tough sell.
 - Limited access to hardware and software
 - No clear best practices or proven technology
 - Expensive software platforms for small/mid-size implementations
- RFID has a bad reputation of being very closed, expensive and having high barriers to entry
- Open Source can remove RFID's barriers to entry by making it easier and affordable
- Open Source fosters a learning community that can improve awareness and foster new development in RFID

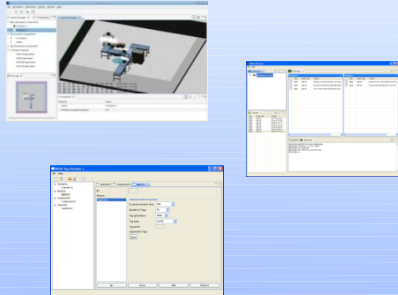
What is Rifidi?

- Rifidi is a complete RFID Application Platform
 - Leading set of Prototype and Testing Tools
 - Open Source RFID Middleware Platform
 - ALE and Workflow development tools
 - Based on Eclipse and OSGI w/ Lightweight Emphasis
 - Open Source Ideals – Business Ready Purpose
- Rifidi is an open source RFID community
 - Numerous Contributors – UofA, PennState, IBM, FossTrak
 - Corporate and University Usage – PennState, IBM, HP
 - Over 36,000 downloads strong, Active Forums
 - Developer Contributions to LLRP-TK and other RFID toolkits

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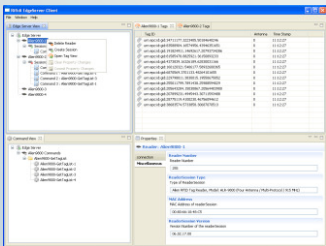


Rifidi Product Suite

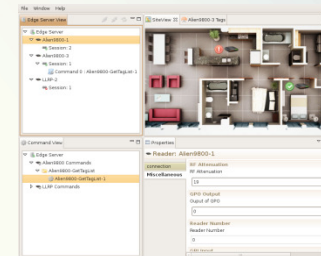


Rifidi
ToolKit
Rifidi Designer
Rifidi Emulator
Rifidi Tagstreamer

Rifidi Workbench



Rifidi EdgeServer



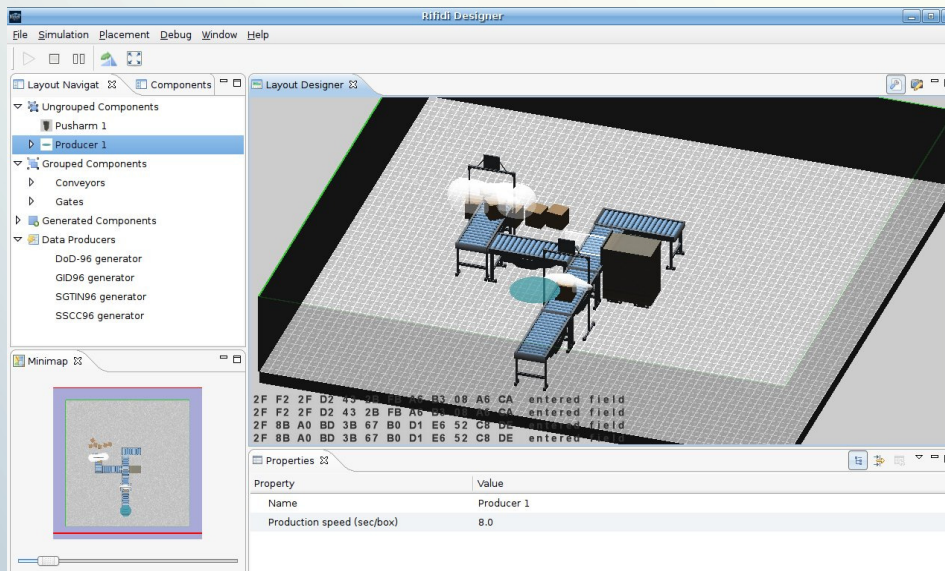
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Rifidi Toolkit

“Software Defined RFID”

- The premier Prototyping Suite in RFID today
 - Designer – Create Visual Workflows to simulate RFID Processes
 - Emulator – Develop and Test with Software Defined Readers
 - Tag Streamer – Load Test and simulate large RFID data streams



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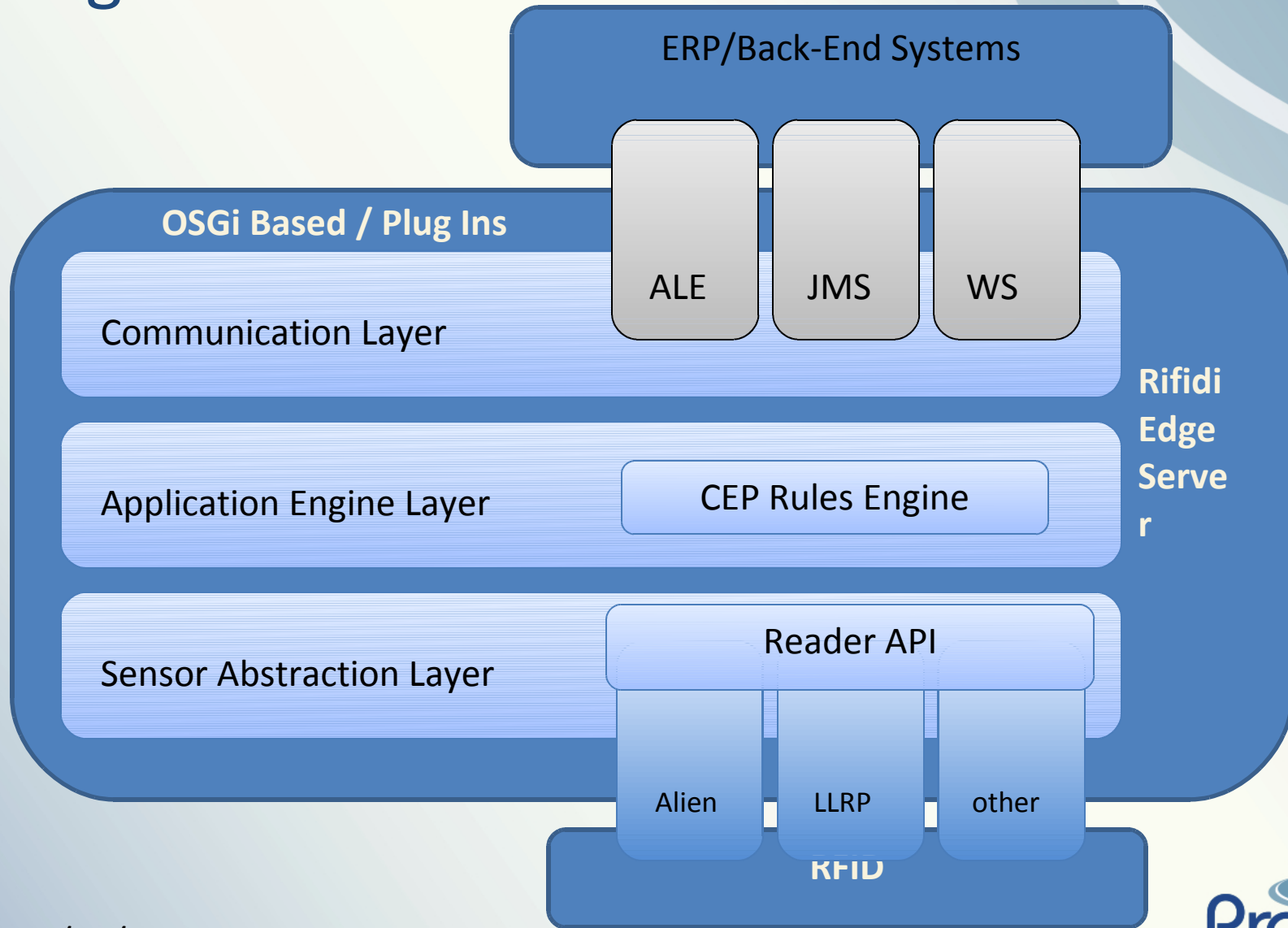
Rifidi Edge Server

- Cutting edge RFID Middleware Platform
 - Lightweight, High Performance Platform based on OSGI and Java
 - Built with module update and hot deploy features
 - RFID customization of high performance CEP/ESP Engine (Esper)
 - Standards compliant ALE Engine built on top of Esper and FossTrak TDT
 - Combine ALE and CEP modules to create dynamic RFID applications
- Supported by Development & Monitoring Tools
 - Close integration to our Prototyping Suite
 - Eclipse Based tools to develop RFID Workflows
 - Eclipse and Web Based Monitoring tools for Production Operations
 - Sophisticated Notifications and Alerts definition toolkit

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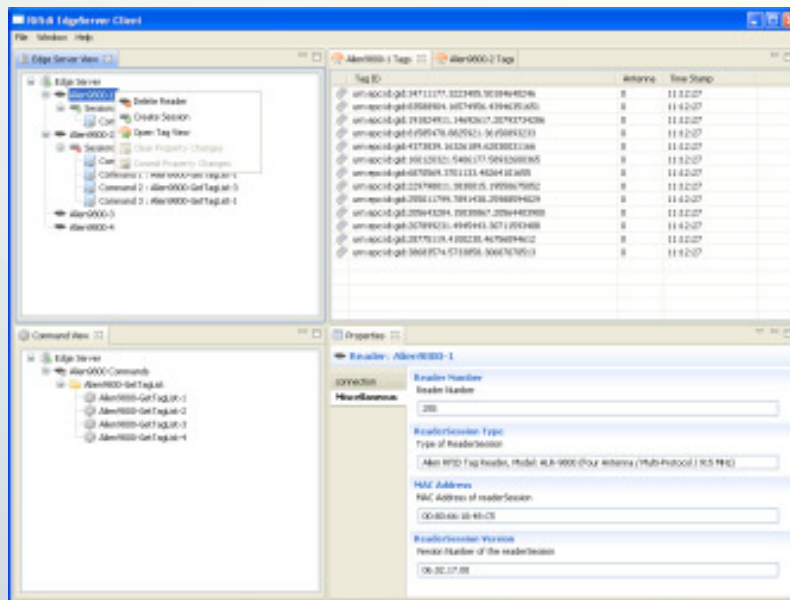
Edge Architecture



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Rifidi Workbench

- Development Platform for ALE and RFID
 - Eclipse Based UI Centric Development
 - Graphical Support for Building ALE
 - Build Sensor Plug-ins and customize RFID data collection
 - Workflow tools for custom RFID application
 - Future support for other ALE Engines



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Putting it all Together

- Start Prototyping with Rifidi Toolkit
 - Try scenarios and put together quick demo's
 - Keep the scenarios for virtual testing later
- Develop RFID applications with Rifidi Edge Server
 - Create custom java applications using our Sensor Abstraction Layer
 - Create custom applications using our customized rules engine
 - Leverage platform for communication and integration
- Use Rifidi Workbench to ease development and Monitoring
 - Use Workbench to create standard ALE applications
 - Visually set up readers and data collection methods

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Licensing and Support

- Rifidi Toolkit
 - LGPL V2.0 licensed
 - Currently available for download
- Rifidi Edge Server
 - GPL V2.0 Licensed for standard version
 - Can be dual licensed for OEM's
 - Started Closed Beta program on June 15th
 - Full Version Released on October 23rd
- Rifidi Workbench
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