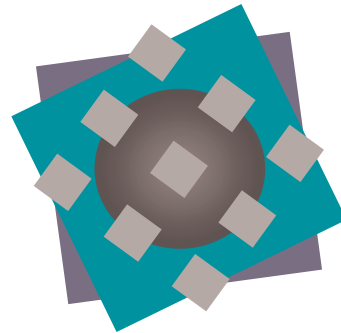
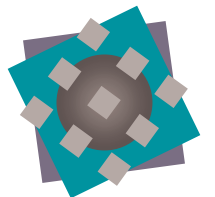


# **WL BOSS: a New Platform for RFID Driven Process Execution**

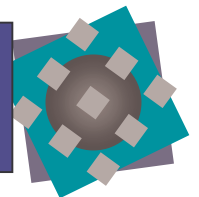


**© 2004 WareLite UK Ltd**



- **RFID technologies demand Software infrastructures that can:**
  - ***Manage the large volume of data RFID generates***
    - *As the adoption of RFID tagging will be incremental – e.g. from pallets to individual items – the infrastructure must scale up horizontally in synchrony with the increase in data volumes*
  - ***Manage RFID data in real time***
    - *Having tagged single items, you want to use data from a single tag to trigger an automated process that is specific for that single item – not for a batch*
  - ***Support processes crossing the enterprise's boundaries***
    - *Co-ordinating legacy and suppliers' systems in real time, end-to-end processes – e.g. from order taking, to ATP check, to delivery, to inventory replenishment and post-sale services*
  - ***Be quickly deployed, to reap RFID benefits more quickly – increasing your ROI***
  - ***Make it easy and inexpensive to modify RFID triggered processes as the scope of RFID tagging change – and as your strategies change***

But what is the reality of current software infrastructures supporting RFID?

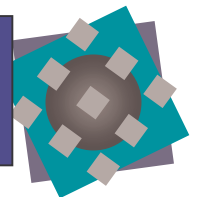


- **The combination packaged applications+integration has severe limitations in terms of implementation timeframes, flexibility and costs:**
  - *The leader of Enterprise Application Software, SAP, suggests a timescale of 2 years for fully working ‘Business Process Innovation & Automation’\**
  - *Any successive modification to such ‘innovative & automated’ processes will have a major impact over the whole infrastructure:*
    - *‘The last thing you want is to spend all the money on tags and a business case, pay for all the backend integration, and then decide you want to change your processes!’\**
  - *IDC researchers estimate that Supply Chain Management applications cost large multinational companies between \$10m and \$50m, and making them work can cost up to another five times the purchase cost\*\**

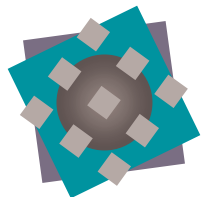
\*‘RFID and the Adaptive Enterprise: What’s Real Now? What’s Next?’, SAP Insider, Apr-May-Jun 2004, Volume 5 Number 2

\*\*‘Supply Chains’, Computing, 22 April 2004

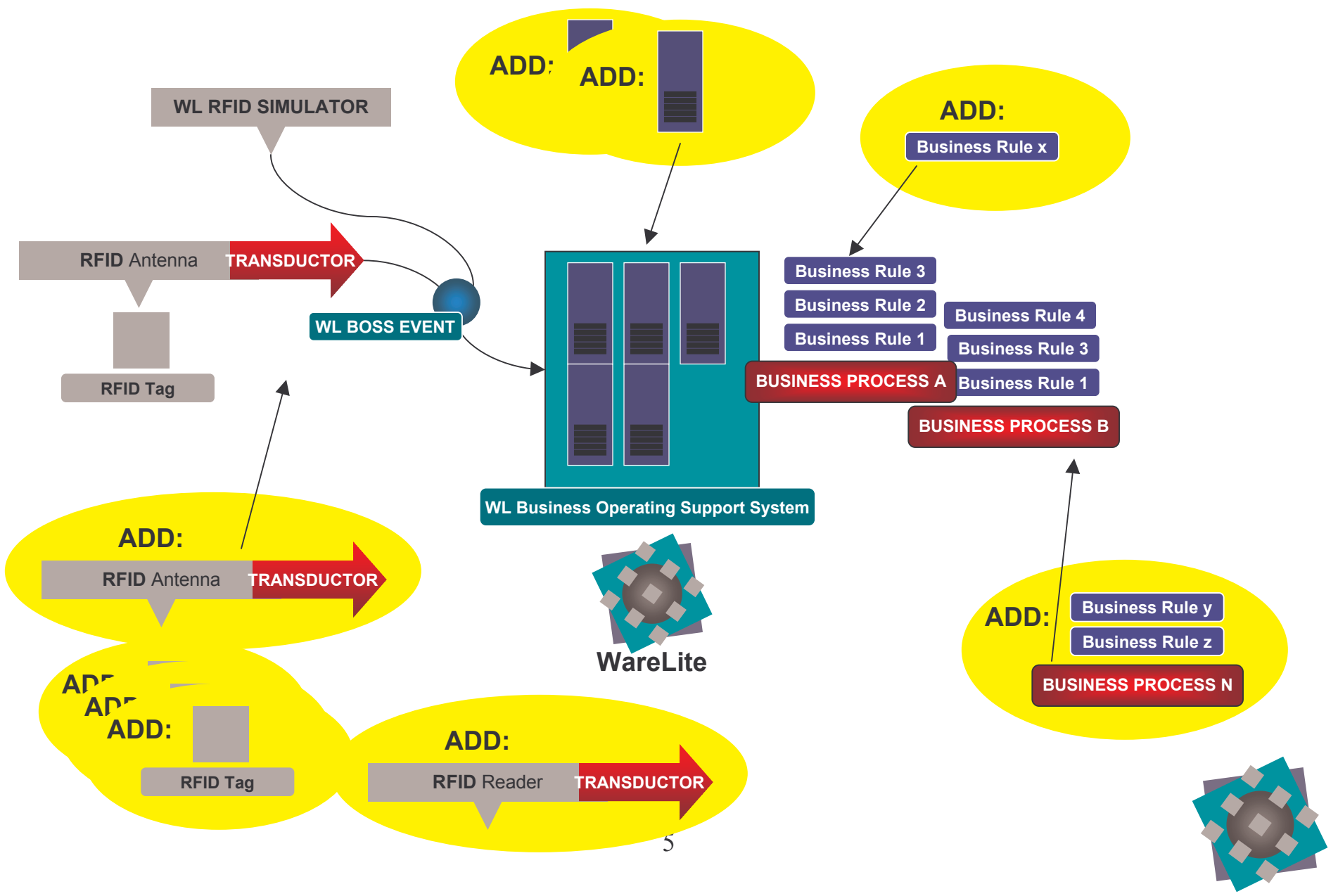
Plus, current applications are designed to process events in batches, not individually – i.e. in Real Time



- **WareLite Business Operating Support System offers you the possibility to:**
  - ***Start experimenting with RFID now, at low cost, with any number of real time, automated end-to-end business processes***
  - ***Increase the amount of RFID tagging over time, scaling up your infrastructure investment as the amount of data to manage grows***
  - ***Implement Real Time processes***
  - ***Add new processes, change existing ones at low cost – at any moment in time***
  - ***Involve your partners, suppliers, clients, distributors in your Value Chain – in your time and at low cost***



# A new Software Infrastructure for RFID: WL BOSS



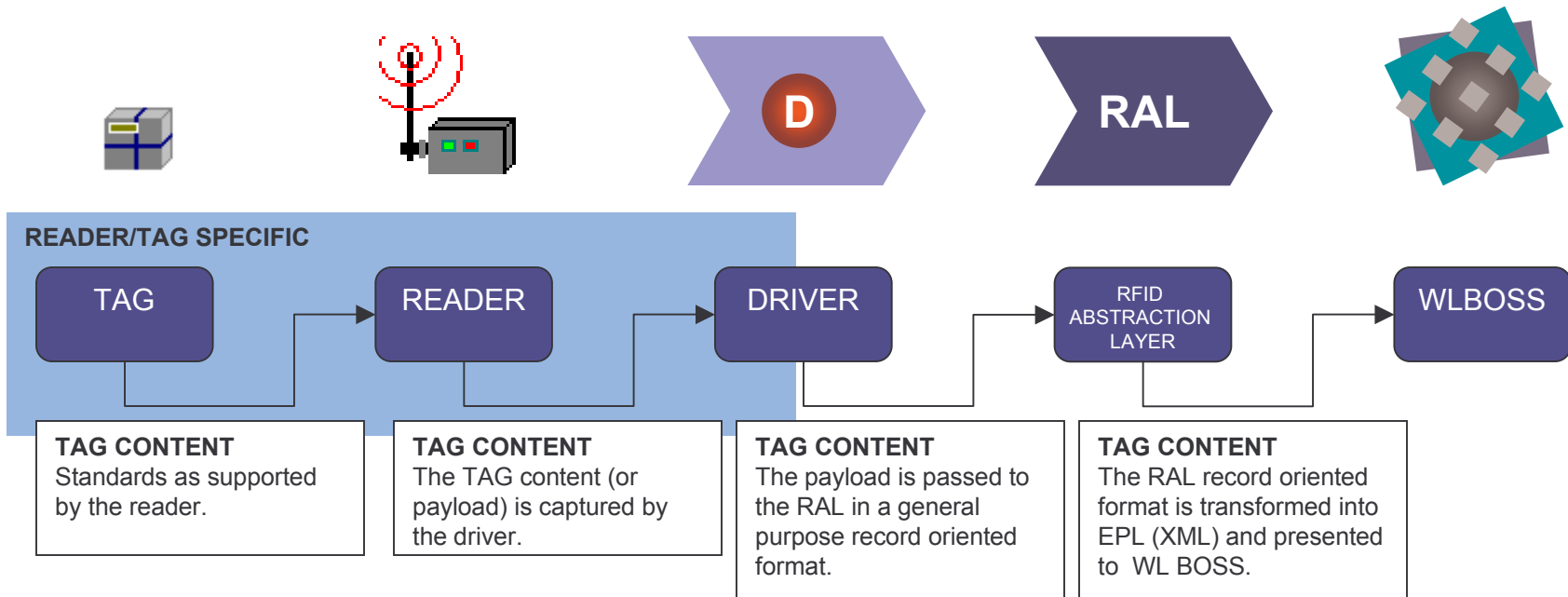
# WL RFID Architecture

## DRIVER

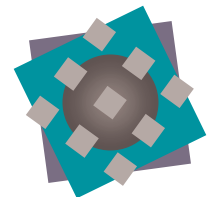
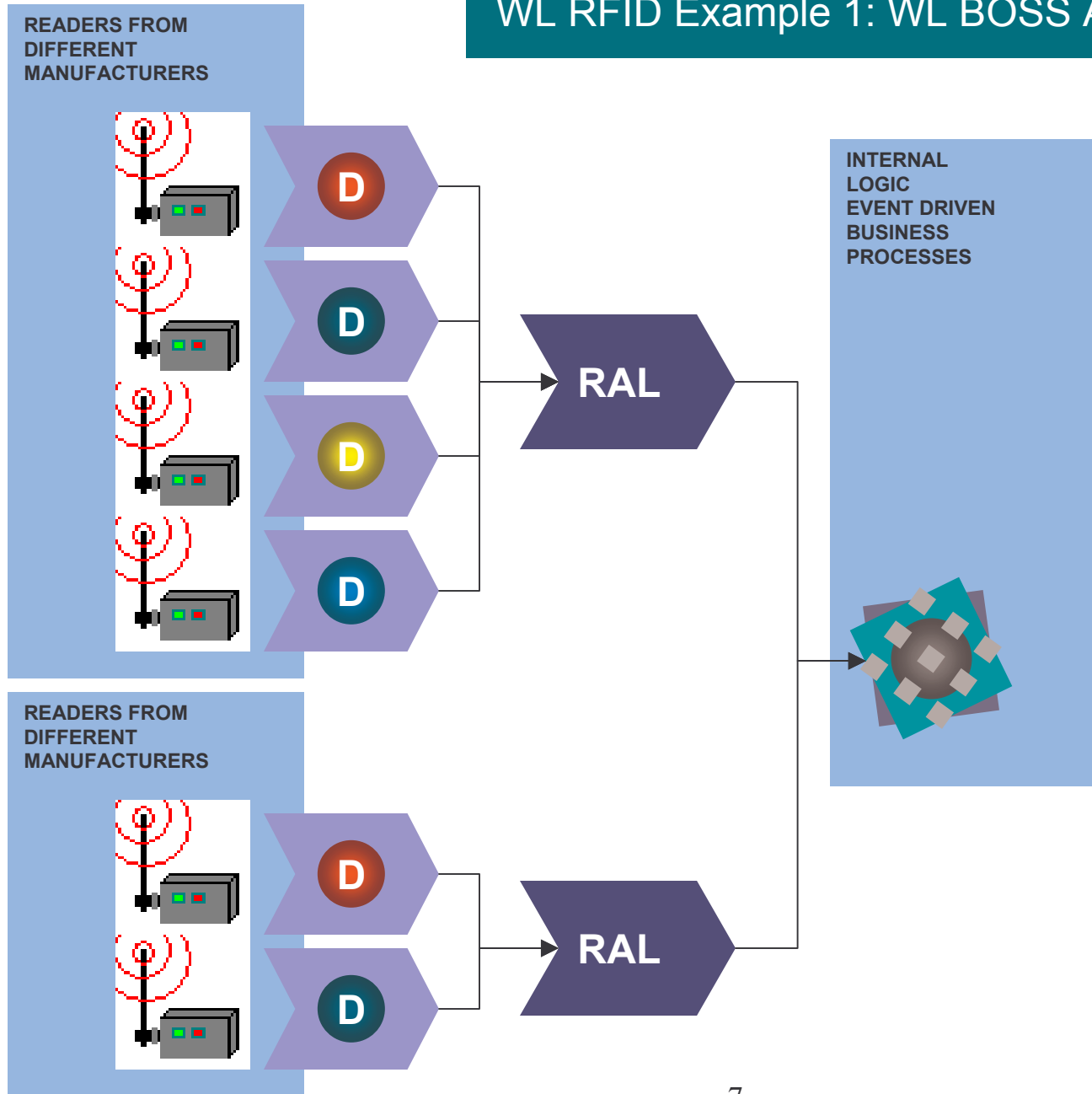
The driver is Reader specific and based on low-level SW licensed by the Reader manufacturer. Independently of the specific manufacturer, the driver has to present RAL records to the RAL. The RAL records are independent of the specific reader and of the specific TAG standards. The DRIVER also provides enrichment, e.g. the driver has the responsibility to enrich the TAG content with info such as time and reader position (when applicable).

## RFID Abstraction Layer

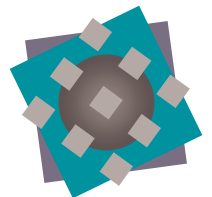
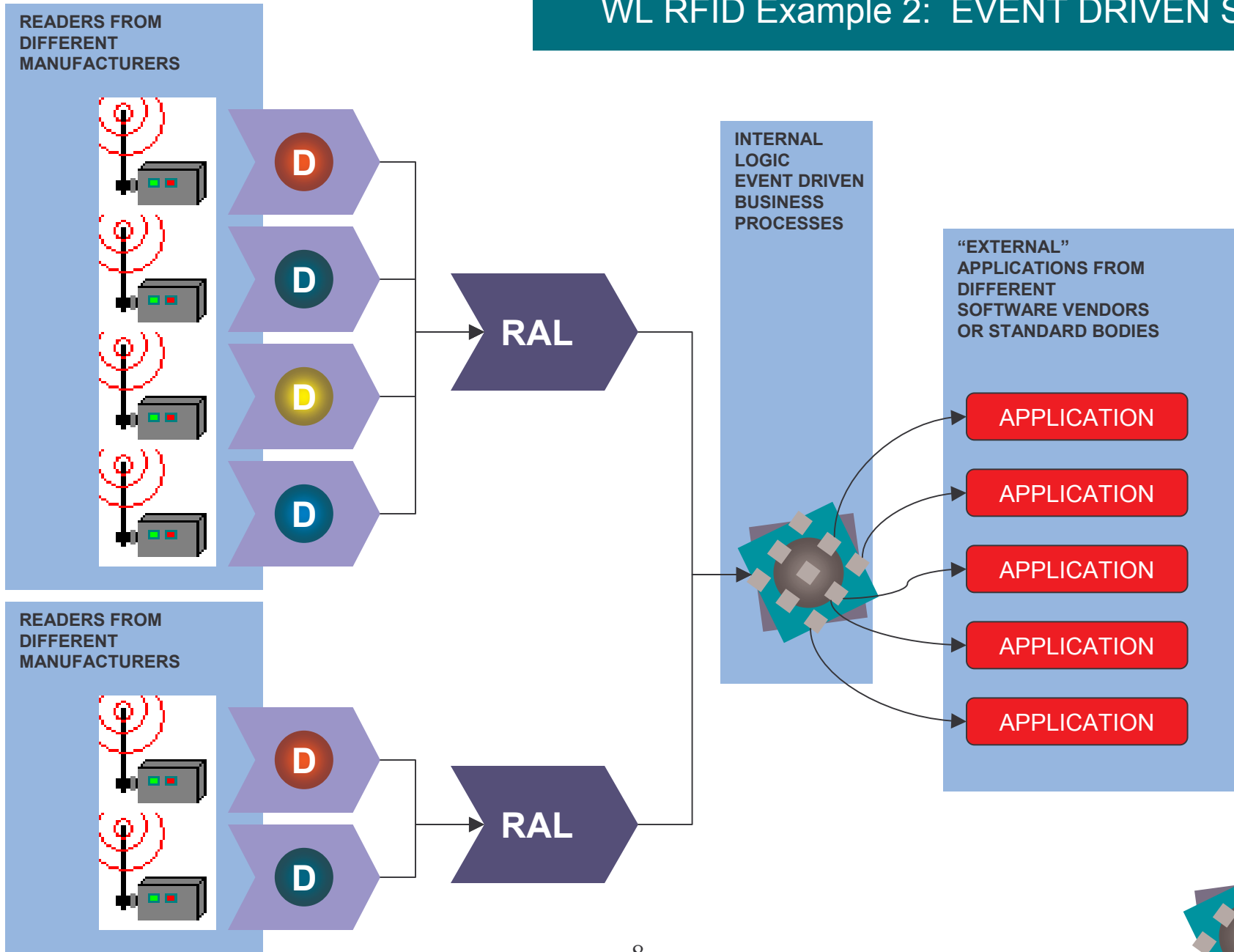
The RAL is RAL records aware and it has to provide transformation from RAL record format to XML EPL (or other application specific formats). The RAL also provides latency management. If the same signal (e.g. same Tag Serial Number) is received several times within a configurable time window then it is discarded.



# WL RFID Example 1: WL BOSS AUTONOMOUS LOGIC

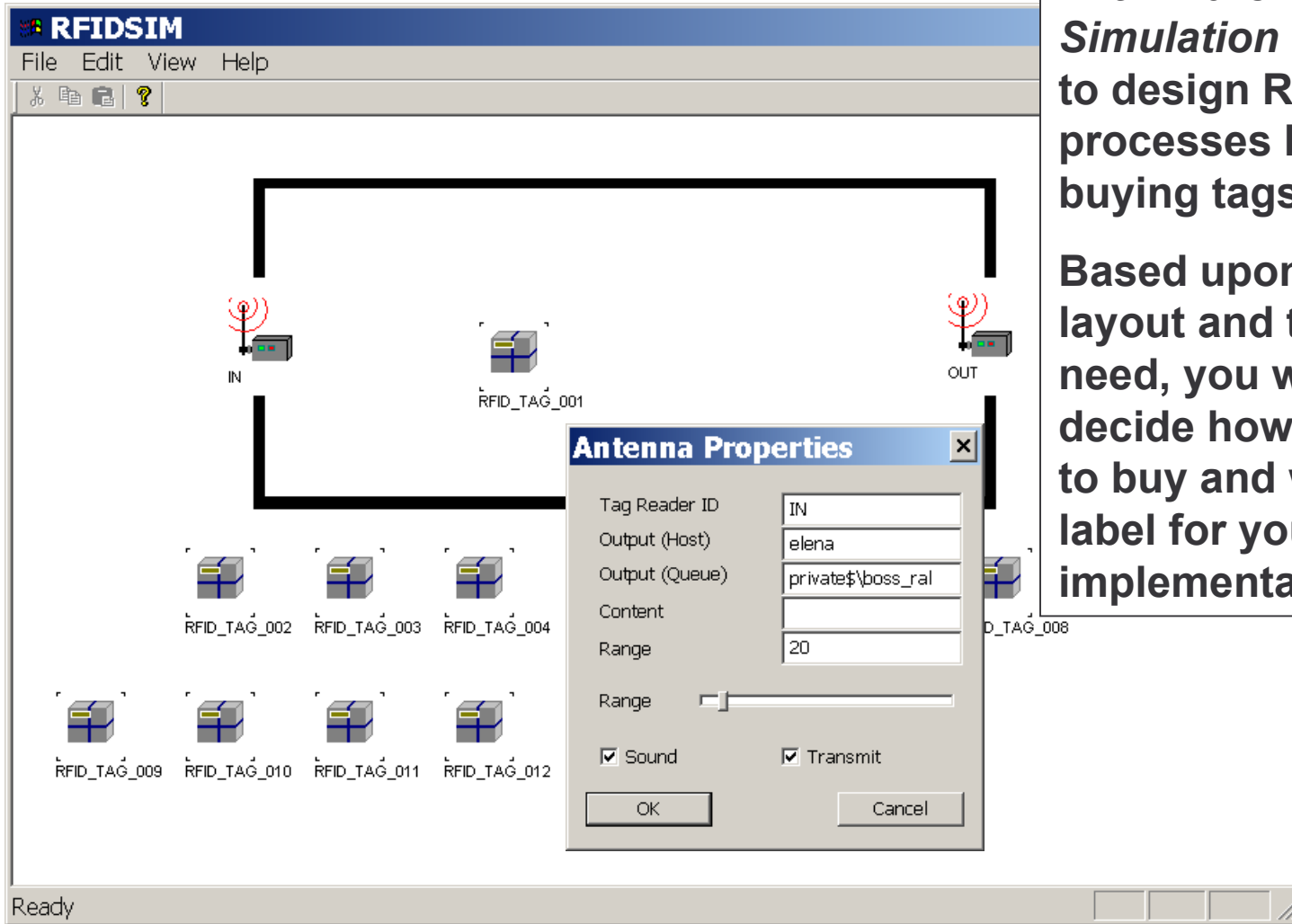


# WL RFID Example 2: EVENT DRIVEN S.I.



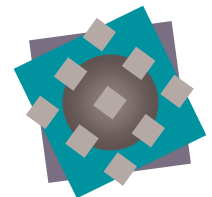


## Start Experimenting Now

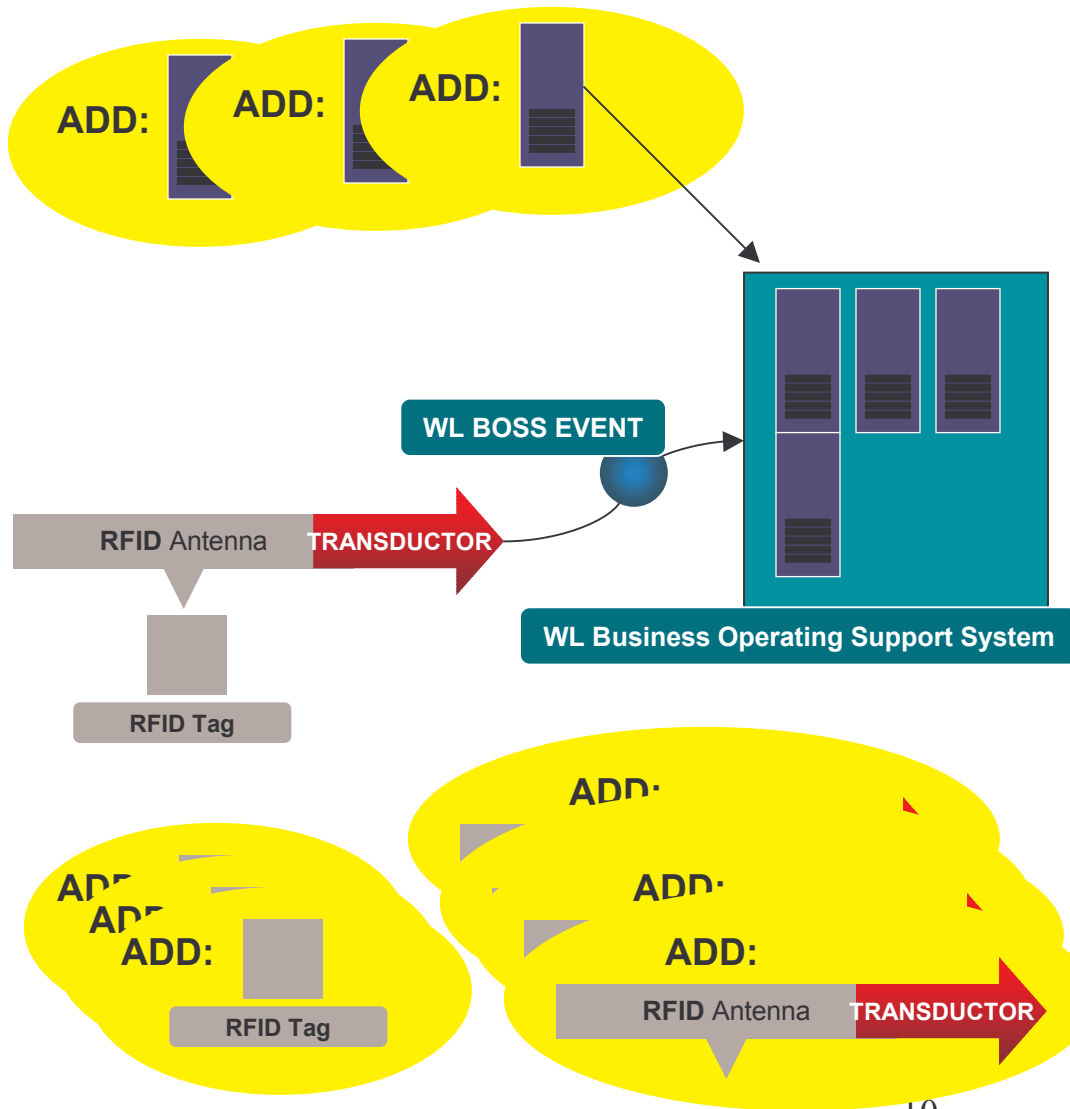


With WareLite's *RFID Simulation Tool* it is possible to design RFID triggered processes before even buying tags and antennas.

Based upon your warehouse layout and the processes you need, you will be able to decide how many antennas to buy and which items to label for your first RFID implementation.



## Scale Up your RFID Infrastructure as you need

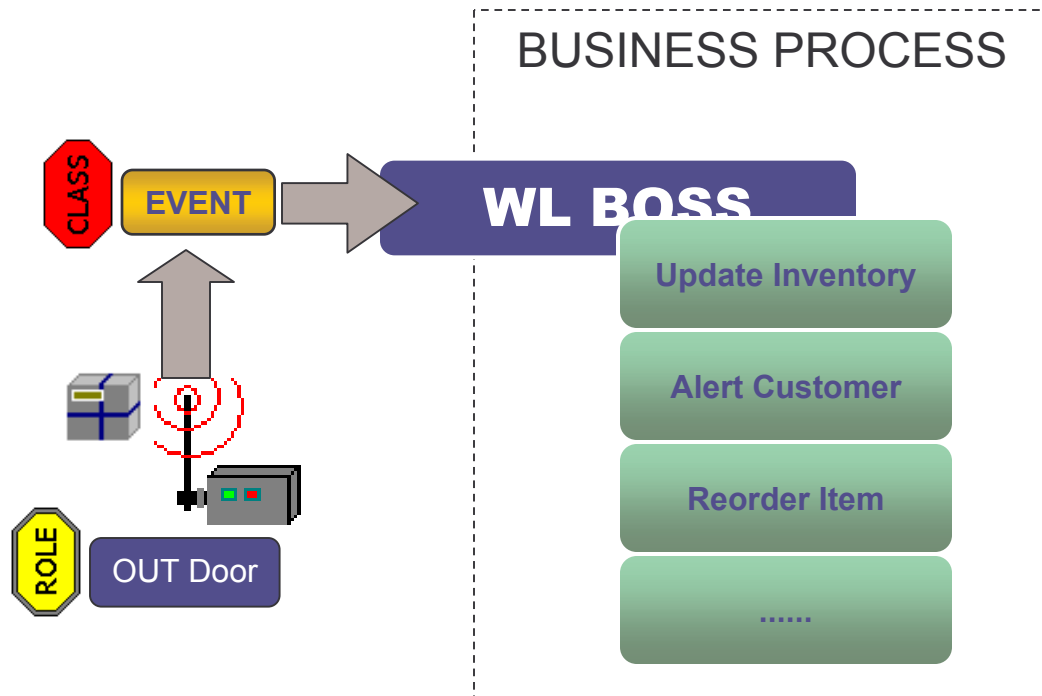


As you increase the scope of RFID tagging – e.g. from pallets to single items, from 10 item categories to 1000 and more – and the placement of your antennas – e.g. from doors to shelves - your WL BOSS infrastructure will increase proportionally to your increased capacity needs.

Derived from Grid Computing, WL BOSS is horizontally scalable: you can increase its capacity by simply adding new process execution units (Node Managers), installed on inexpensive computers, with no need to modify your processes.



## Implement Real Time Processes



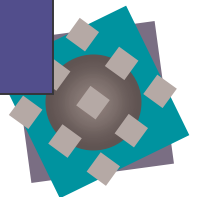
Having tagged single items, you do not want to have systems that still need to pool events in batches prior to processing.

With WL BOSS, each single event – e.g. an item moving past an antenna on the warehouse's exit door – triggers an automated business process.

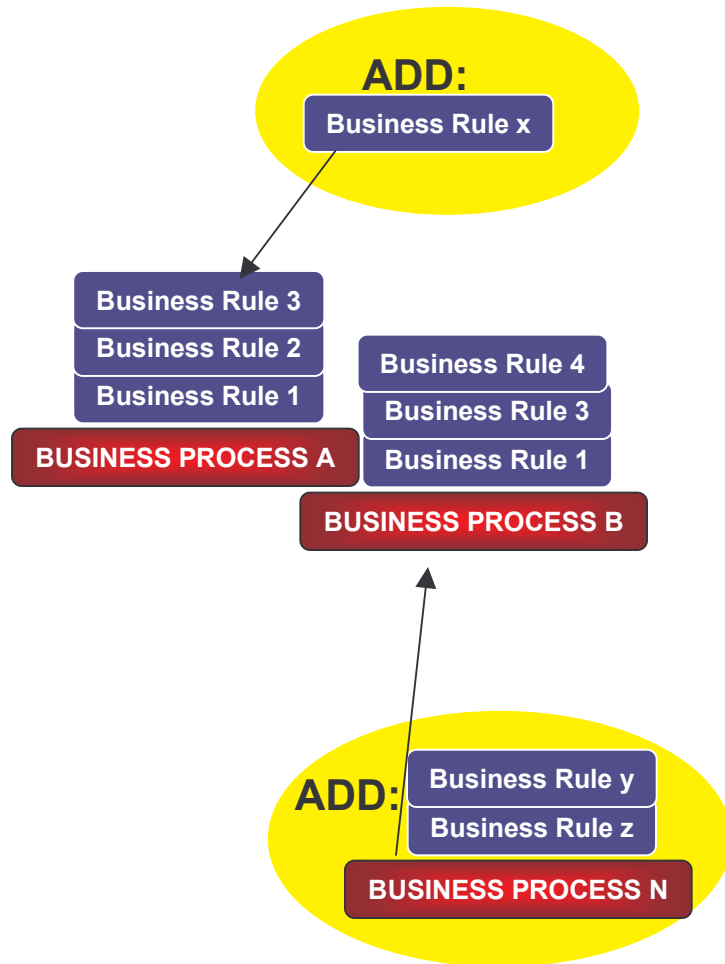
At WareLite, Real Time means Zero Latency: each single business event – be it an everyday customer order or a sudden breakdown – triggers a specific, end-to-end, automated business response.

No batches.

No exception management.



## Add and change Business Processes



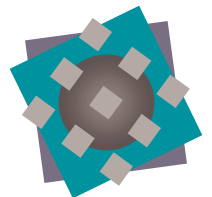
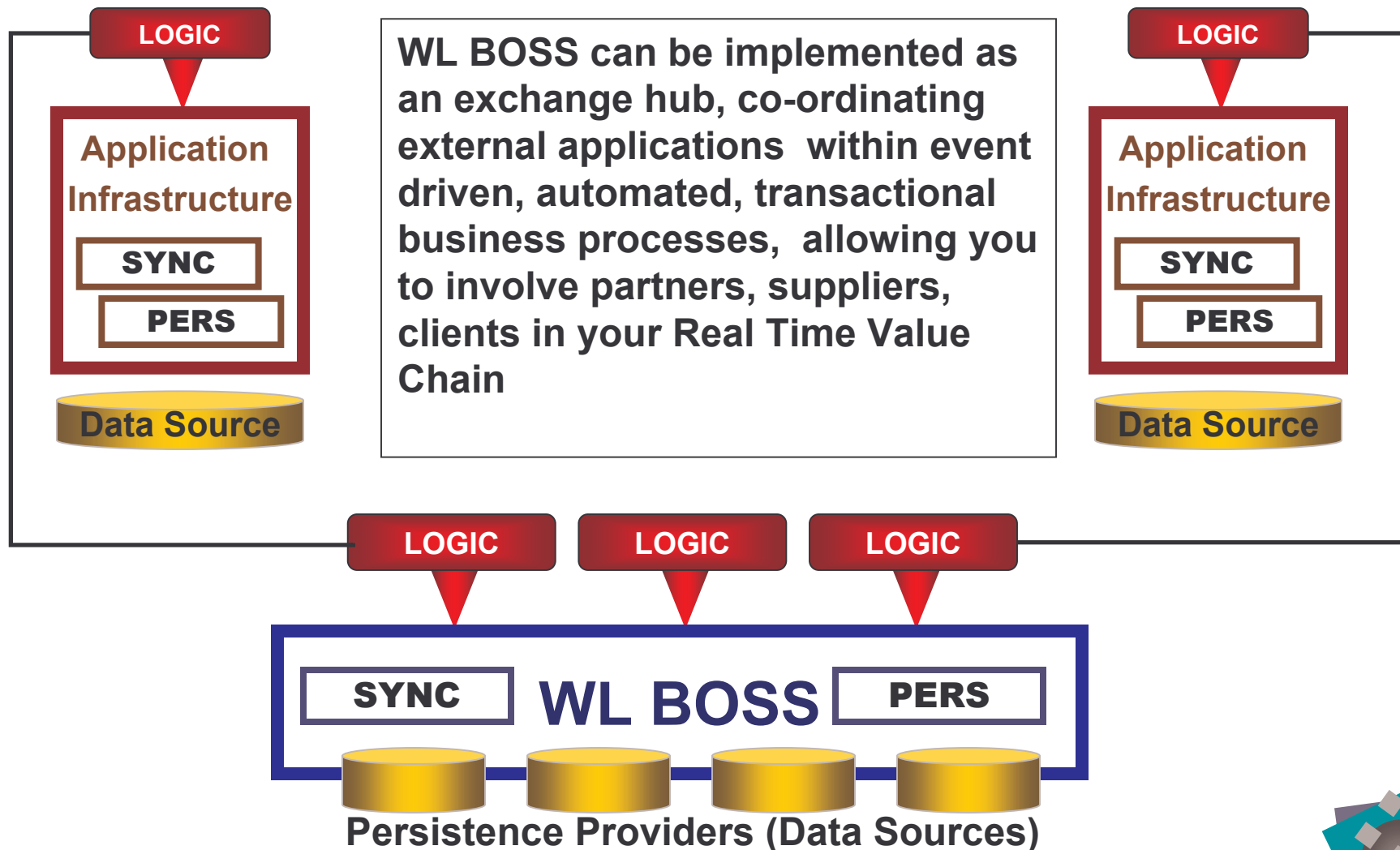
**WareLite Business Processes are sequences of independent Business Rules:**

- The same Business Rule can be reused in different processes
- A Business Rule can be added/modified with no impact on the other rules within the same process
- A new process can be added with no impact on existing ones

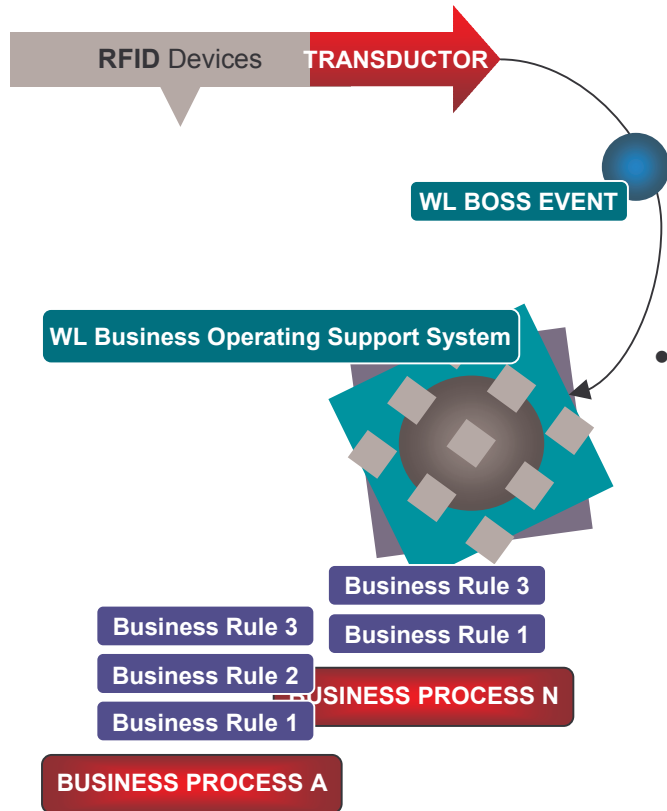
For example, you might start with a process that automatically updates your inventory as items come in and out of your warehouse; then you might add a rule that alerts you when items go below a certain watermark; later you might add rules that give you visibility over items ordered but not shipped to customers yet; etc.

# A new Software Infrastructure for RFID: WL BOSS

Extend your processes outside your company



# WareLite Real Time Solutions for RFID-driven Supply Chain Execution



- **Manufacturing**

- *Real Time, Event Driven Supply Chain Execution – from client order and/or from production line to extended/virtual inventory check, to inventory replenishment, transportation etc*
- *Real Time visibility over Retail Sales*
- *Real Time Vendor Managed Inventory*

- **Retail**

- *Real Time, Event Driven Supply Chain Execution (as above)*
- *Sales of Value Added Services to Suppliers – i.e. Real Time Visibility over sales of their goods*
- *Efficient Consumer Response – in Real Time*
- *Real Time in-store Marketing*
- *Trade Promotion Management (TPM)*
- *Till-free supermarkets*

- **Logistics**

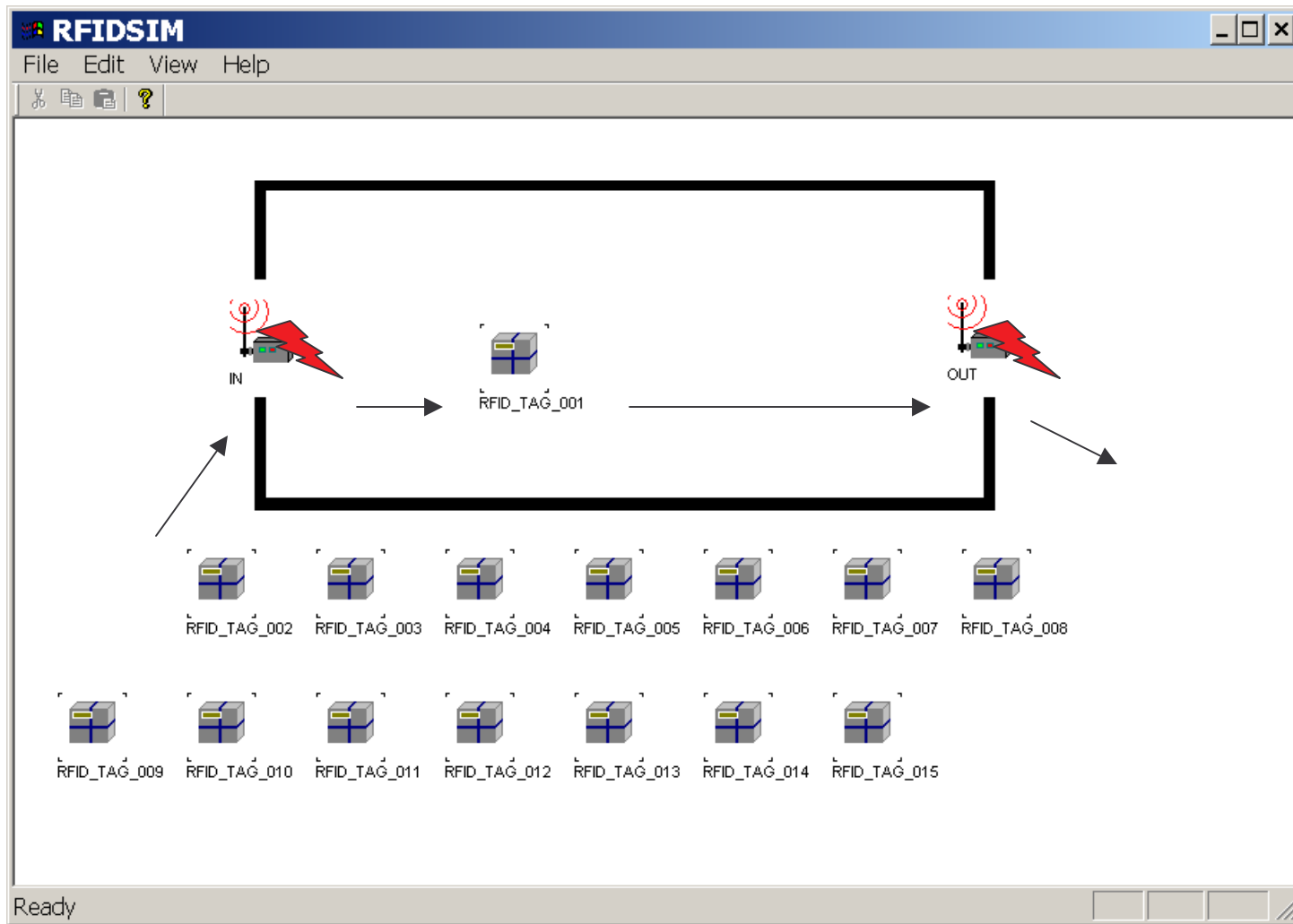
- *Real Time Package Delivery Tracking*

- **Other**

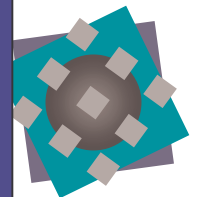
- *Airport luggage tracking*
- *Drugs/Tools tracking in Hospitals/Labs*



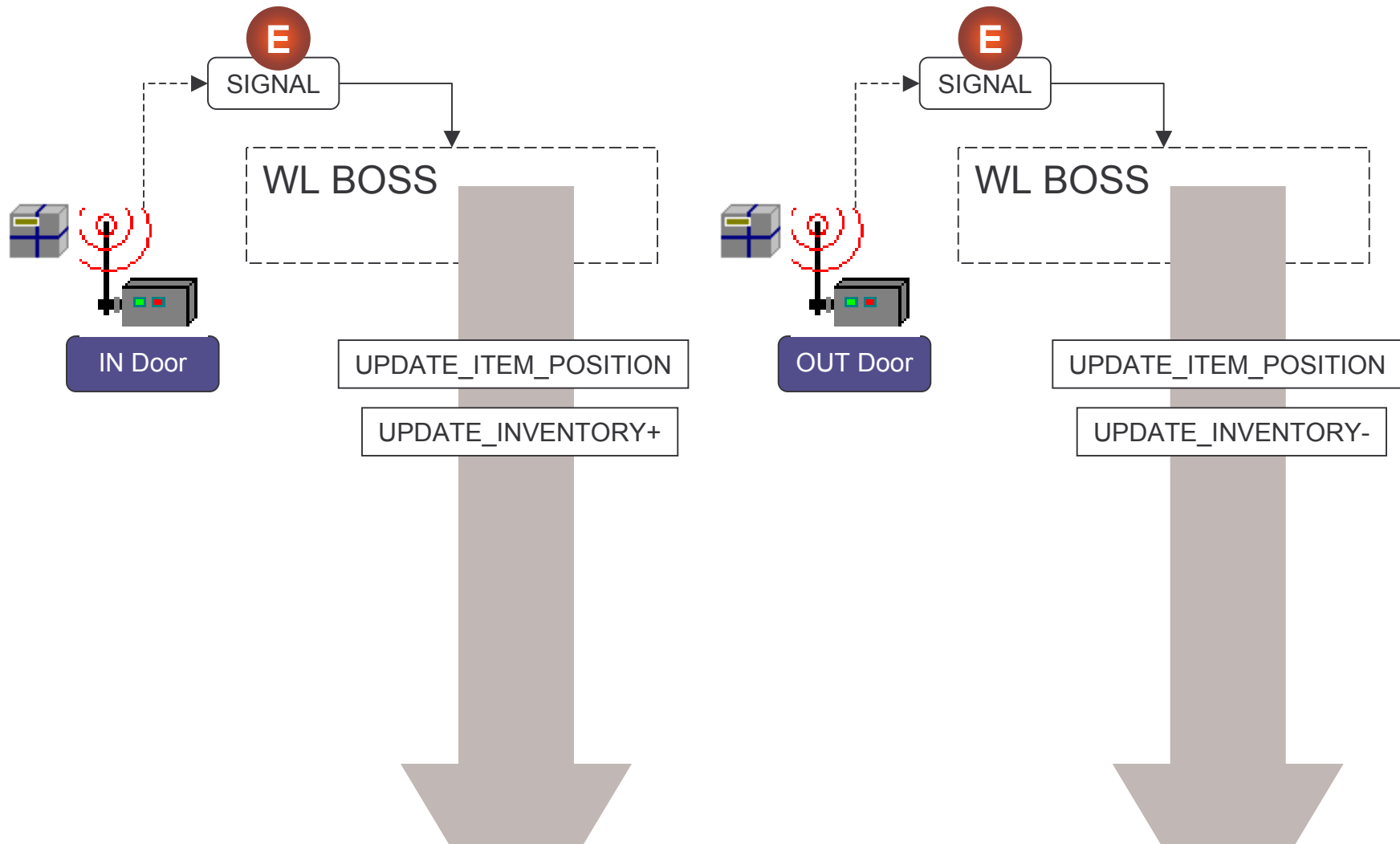
# Technology Demonstration: Inventory Update



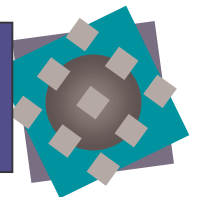
WareLite RFID Simulator is freely available to our Partners as a support in designing RFID Driven Business Processes – with no need for an RFID infrastructure in place



# Technology Demonstration: Inventory Update



A live event-driven inventory update technology demo is available upon request





- **Start designing your key processes – without buying RFID tags and readers**
  - *With WL RFID simulation tool, based on your warehouse layout and on the processes you want to implement, you can design the physical outlay of your readers positions and decide which items you want to tag*
- **Buy tags and readers and implement your key processes in prototypes and pilots**
  - *Buy only the infrastructure you need to get started*
- **Fine tune the key processes, add new ones**
- **Deploy your pilot processes incrementally - with no need to modify them**
  - *Increase processing capacity as you need it*
- **Measure the benefits – just add the appropriate business rules to your processes**
- **Keep growing and changing!**

