



# **RFID Technologies for Business & Science**

**Bob Scher, CEO**

**Dynasys Technologies Inc., Clearwater FL**

**[bobs@dyna-sys.com](mailto:bobs@dyna-sys.com)      [www.RFIDusa.com](http://www.RFIDusa.com)**



**Dynasys<sup>®</sup>**

[www.rfidusa.com](http://www.rfidusa.com)

**RFiD**



**Dynasys Has Been Providing  
Automatic Data Collection  
Solutions Since 1988**

# RFID TECHNOLOGY



- **Scan Hundreds of Tags in Seconds**
- **Rapidly Validate Data**
- **Provide High Level of Security**
- **Real Time Inventory**



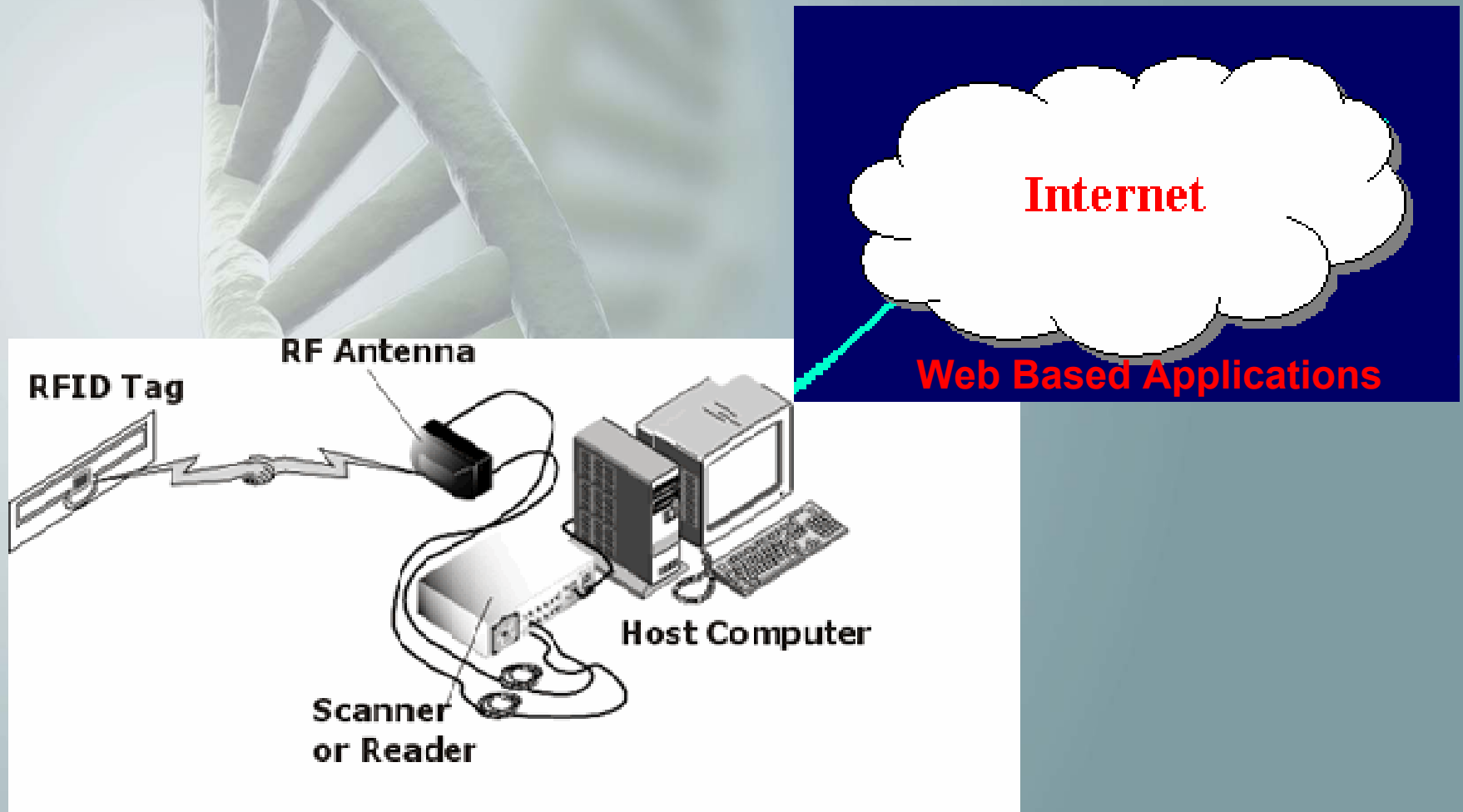
# RFID TECHNOLOGY



- **Eliminate the Pain of Errors**
- **Save Time and Money**
- **Increased Security**



# An RFID System





# Low Frequency RFID

**134.2 kHz**

- **Very Rugged**
- **Works Under Water**
- **Up to 5 foot range**
- **No anti-collision**



# RFID in your Everyday Life

## Pet Microchipping

- Safeguard your Dog or Cat



# **RFID in your Everyday Life**

**Curb Auto Theft – Reduce Insurance Costs**

**RFID Ignition  
Immobilizer**





# Low Frequency RFID Applications

## Fish Tracking



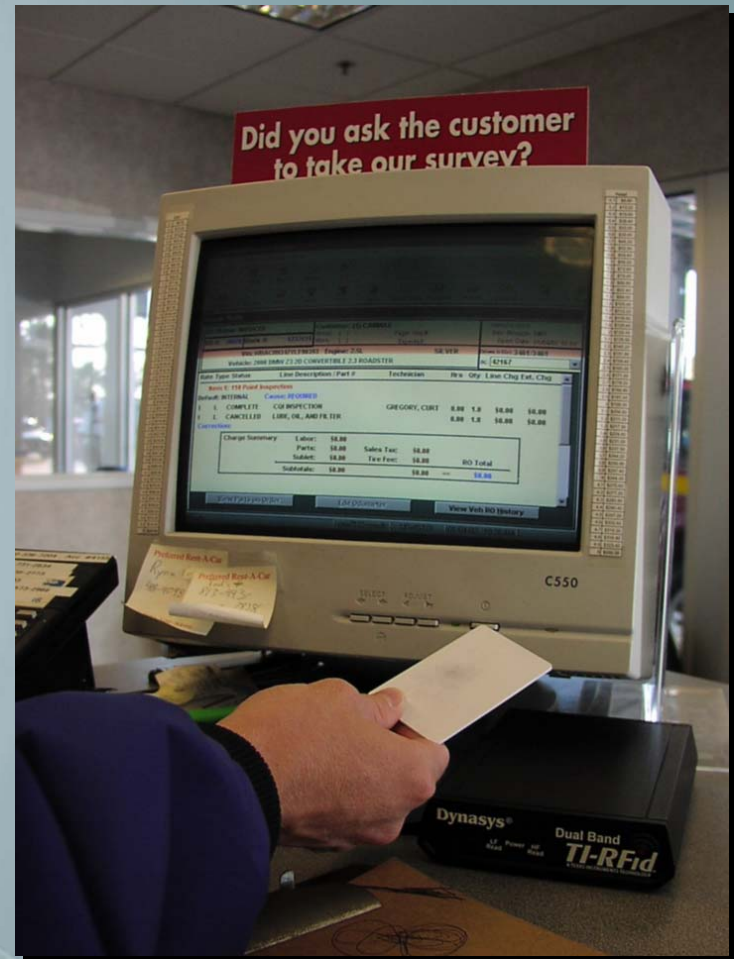
## Livestock Tracking



# RFID in your Everyday Life

Computer Security

Secure Logon  
Authorization



# Low Frequency RFID Applications

## Sports Timing





# Low Frequency RFID Unique Applications

**Plexidor Electronic  
Pet Doors**



**Smart Shelves**





# Access Control

Identify Authorized Personnel



# RFID in your Everyday Life

Exxon-Mobil Speedpass

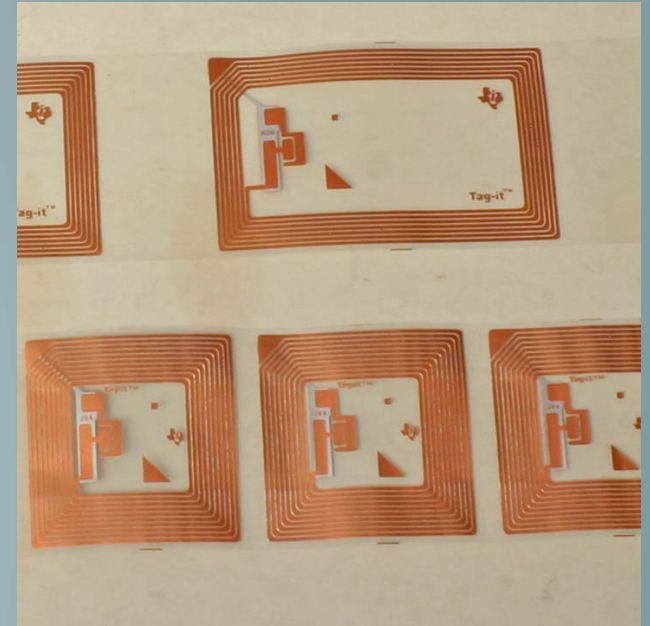
Convenient Point of Sale



# High Frequency RFID

## 13.56 MHz

- Labels, Wrist Bands, ID Cards
- ISO 15693, ISO 18000-3
- Read/Write up to 2048 bits
- Anti-collision 50 tags/sec.
- Up to 2 foot range
- Lower cost
- Poor around metals



# RFID in Libraries

- **Electronic Scanning of Books & Documents**
- **Automated Checkout**





# RFID for Healthcare



# RFID Patient Identification



# RFID for Healthcare

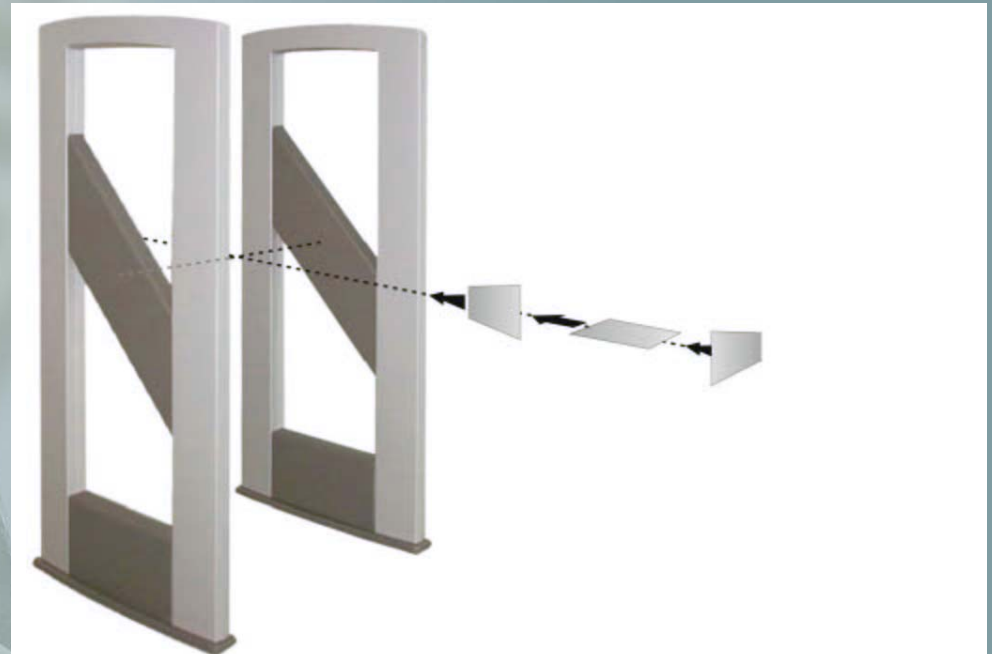
## Pharmaceutical Tube ID



# HF RFID Applications

## Personnel Portal

## Smart Cabinet



The standard configuration of a gate for 3-dimensional label orientation consists of a base antenna ID ISC.ANT1400/700-A Type A and a complementary antenna ID ISC.ANT1400/700-B Type B.

When a label is moved horizontally through the gate, it may be read at least one times depending on its orientation. This ensures high reliability for the antenna system.



# RFID for Industrial Laundry

## 1 CHIP ATTACHMENT

RFID chip patched or sewn onto garment by manufacturer or at plant site



## 2 ASSIGNMENT / CONVERTING

- Association of the RFID chip with the garment data

## LAUNDRY

### 3 SOIL CHECK-IN

Performed:  
- manually one by one  
- or automatically in bulk



### WASHING PROCESS



### PRESS



### 4 CLEAN SORTING

Fully automated or computer assisted manual sorting



### 5 CLEAN CHECK-OUT

Performed:  
- manually one by one  
- or automatically in stack, in bundle



### Delivery



## CUSTOMER

### 6 ON-SITE CLEAN CHECK-OUT

- Garment dispenser



### 7 ON-SITE SOIL CHECK-IN

- Garment collector  
- Soil bag reading on truck



### Return



Continuous Update of Database

# **RFID for Gated Communities**

**Secure Entry for  
Residents & Visitors**



# **Microwave Active RFID**

## **2.45 GHz**

# **VHF Active RFID**

## **433 MHz**

- **Long Range Detection**
- **Directional Antennas**
- **Higher Cost**
- **Limited Battery Life**
- **Anti-collision 10 tags/sec.**





# RFID in your Everyday Life

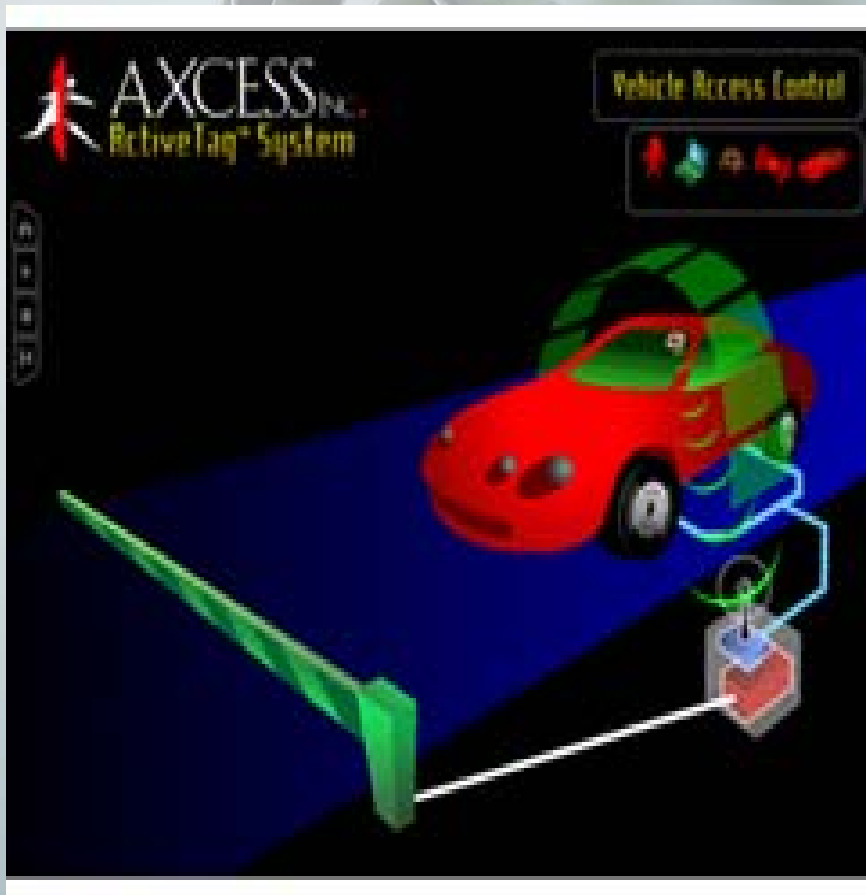
## Florida Highway SunPass

Keeps Traffic Flowing  
Prevent Accidents  
Convenient Payment





# Active RFID Applications



# **RFID & the Supply Chain**

## **EPC – Electronic Product Code Electronic Warehousing**

### **Wal-Mart & DoD Mandates**

- **Pallet Level Tagging**
- **Carton Level Tagging**
- **Item Level Tagging**
- **Electronic Shelves**
- **Automated Checkout**
- **CASPIAN**



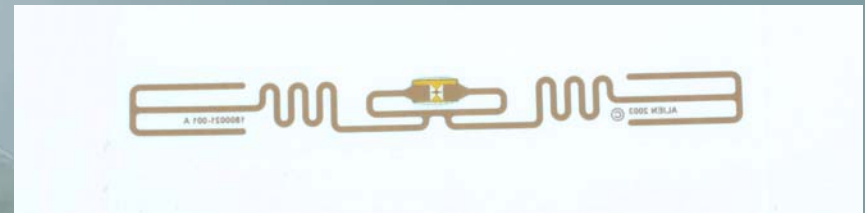
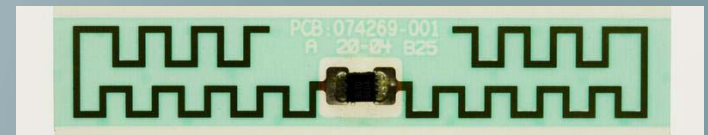
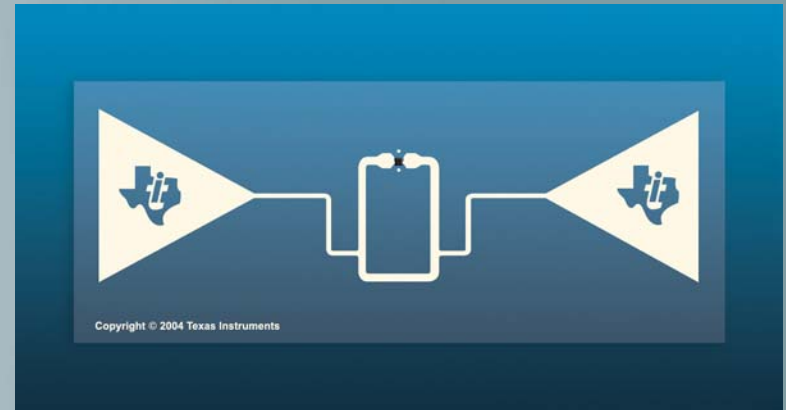
# UHF Passive RFID

## EPC – Electronic Product Code

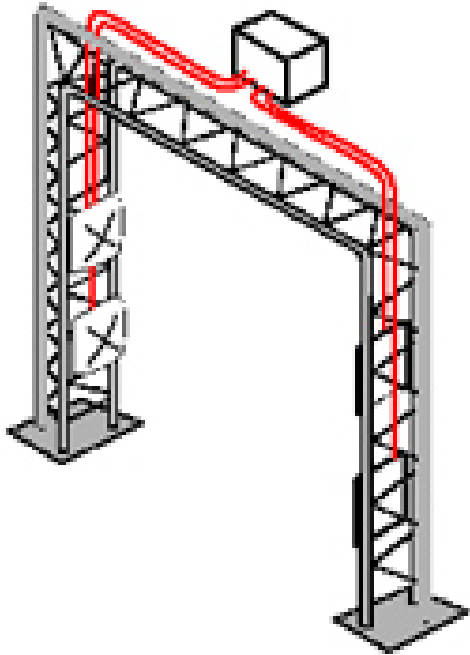
### 900 MHz

### Class 1 Gen 2

- Long Range Detection
- Relatively Lower Cost
- Anti-collision 300 tags/sec.
- Mount-on-Metal
- High Temperature



# RFID UHF Fixed Readers





# RFID UHF Antennas

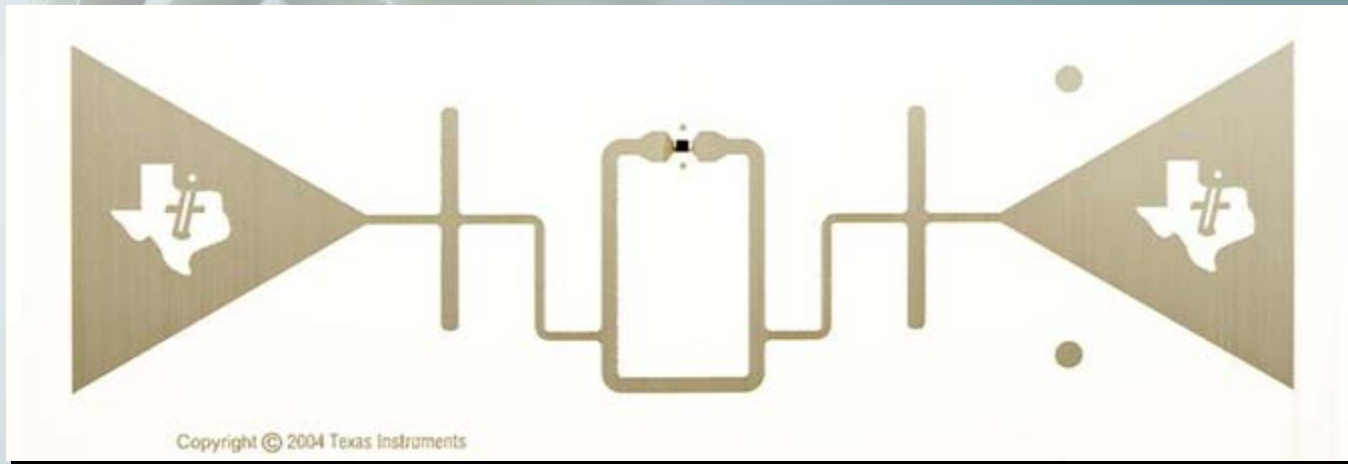


# **RFID**

## **Hand Held Portable Readers**



# RFID UHF Tags



# **RFID - Specialty Tags**

## **High Temp. Mount-on-Metal Tags**



**Rated for Cage Wash and Autoclaves**



# **RFID & Cellphones**

**GSM CDMA PCS**

## **Cellphone as RFID Reader**

**Connects to Internet**

**Identify item's properties**

**Tracking guard tour locations**



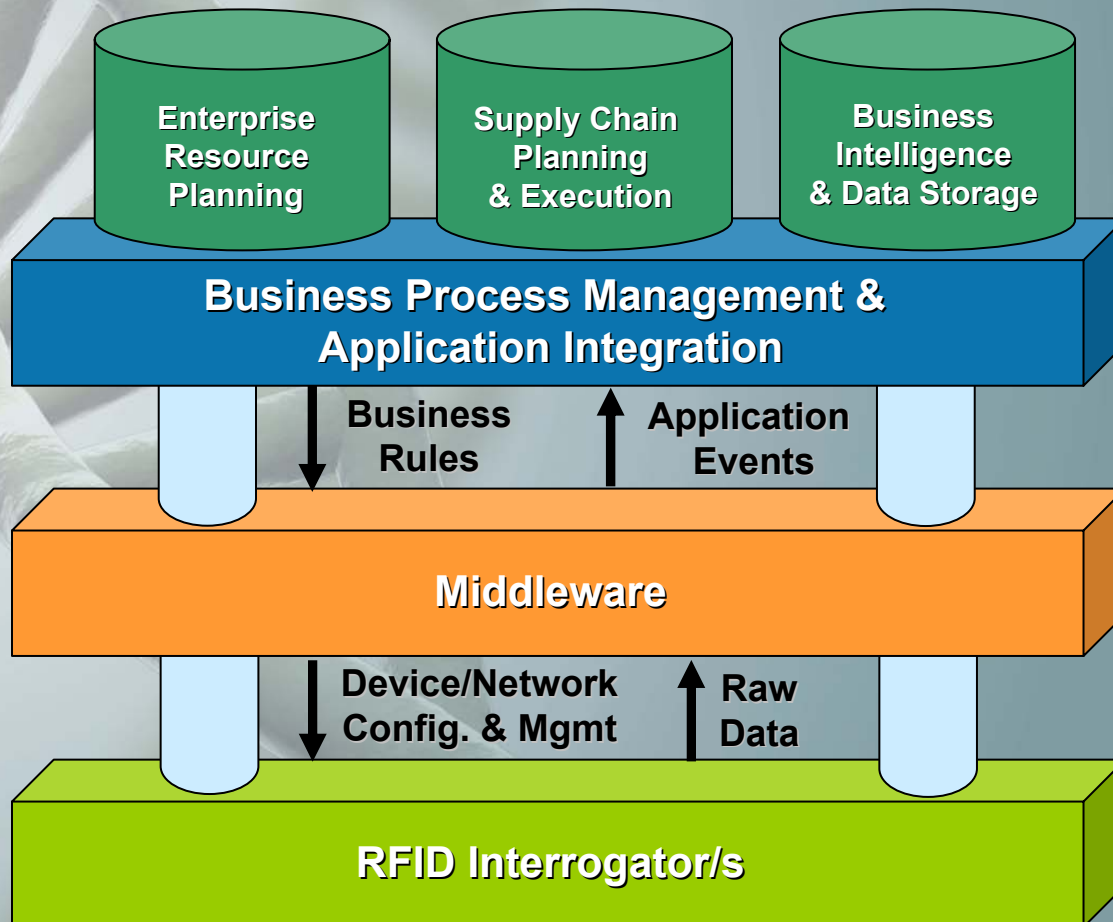
## **Cellphone as Transponder**

**Virtual Credit Card**

**PIN & finger print biometrics**

# RFID Applications & Requirements

## Methodologies - Middleware





**Dynasys**

[www.rfidusa.com](http://www.rfidusa.com)

**RFID**



# **Dynasys RFID Animal Care Warehouse Management System**

- **Receiving Process**
- **Put Away Process**
- **Census Reconciliation**
- **Check Out Process**





# Weekly Reconciliation

- Technician wheels cart down aisle
- Data Stored in realtime via Wi-Fi







**Dynasys**

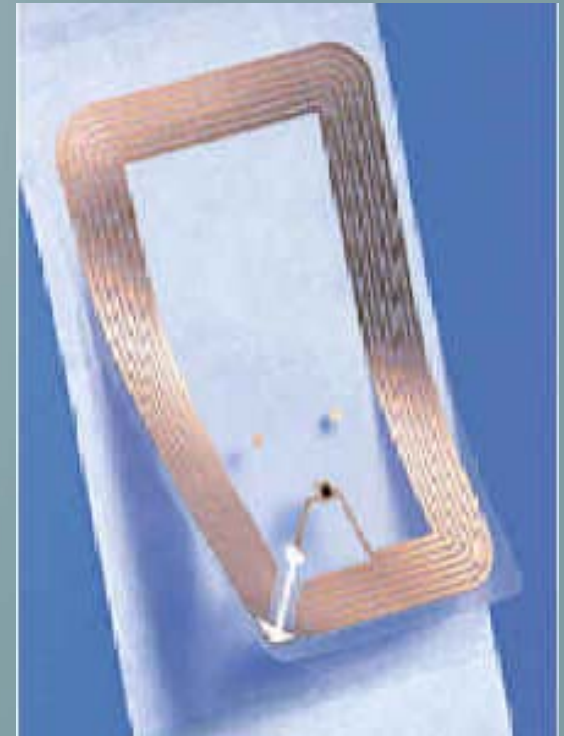
[www.rfidusa.com](http://www.rfidusa.com)

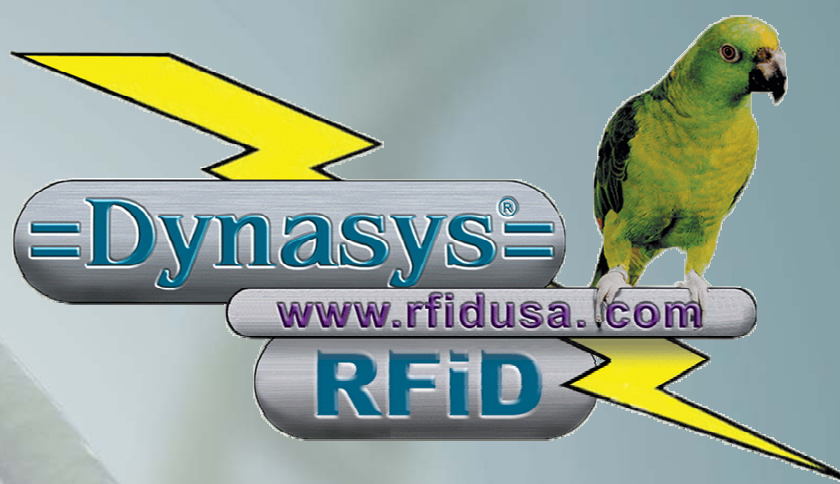
**RFID**

# RFID Technologies for Business & Science

## Summary:

- **Rapid & Accurate Detection**
- **Positive Identification**
- **Securely Encrypted Transaction**
- **Anti-Collision Features**
- **On Board Data Storage**





# Thank You

**Dynasys Technologies Inc.**

**[www.DynasysAnimalCare.com](http://www.DynasysAnimalCare.com)**

**[www.RFIDusa.com](http://www.RFIDusa.com)**

**1-800-867-5968**

**(727)-443-6600**

**Bob Scher, CEO [bobs@dyna-sys.com](mailto:bobs@dyna-sys.com)**