

AVA™ Enterprise Manager Suite with RFID Integration

Overview

- Introduction
- AVA™ Enterprise Manager Functionality
- RFID (Passive / Low Energy Bluetooth)

**To:**

City of Mesa

Mesa City Plaza – Purchasing Division

20 East Main St., Suite 400 Mesa, AZ 85201

Attn: Kristy Garcia, CPPO, CPPB – Senior Procurement Officer

From:

AdvanTech, Inc.

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Annapolis, MD 21401

POC: Robert E. Bona, CEO/General Manager

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DUNS: 160913687

Cage: 1J3C7 – Small Business

GSA Contract: GS10F-0320P

Introductions - AdvanTech

- Founded in 1996
- Small Business
- Headquarters in Annapolis, MD
- Regional office located across the Country
- Primary Focus Areas
 - Logistics
 - Asset Visibility
 - Automated Data Acquisition
 - Data Warehousing
 - Data Visualization



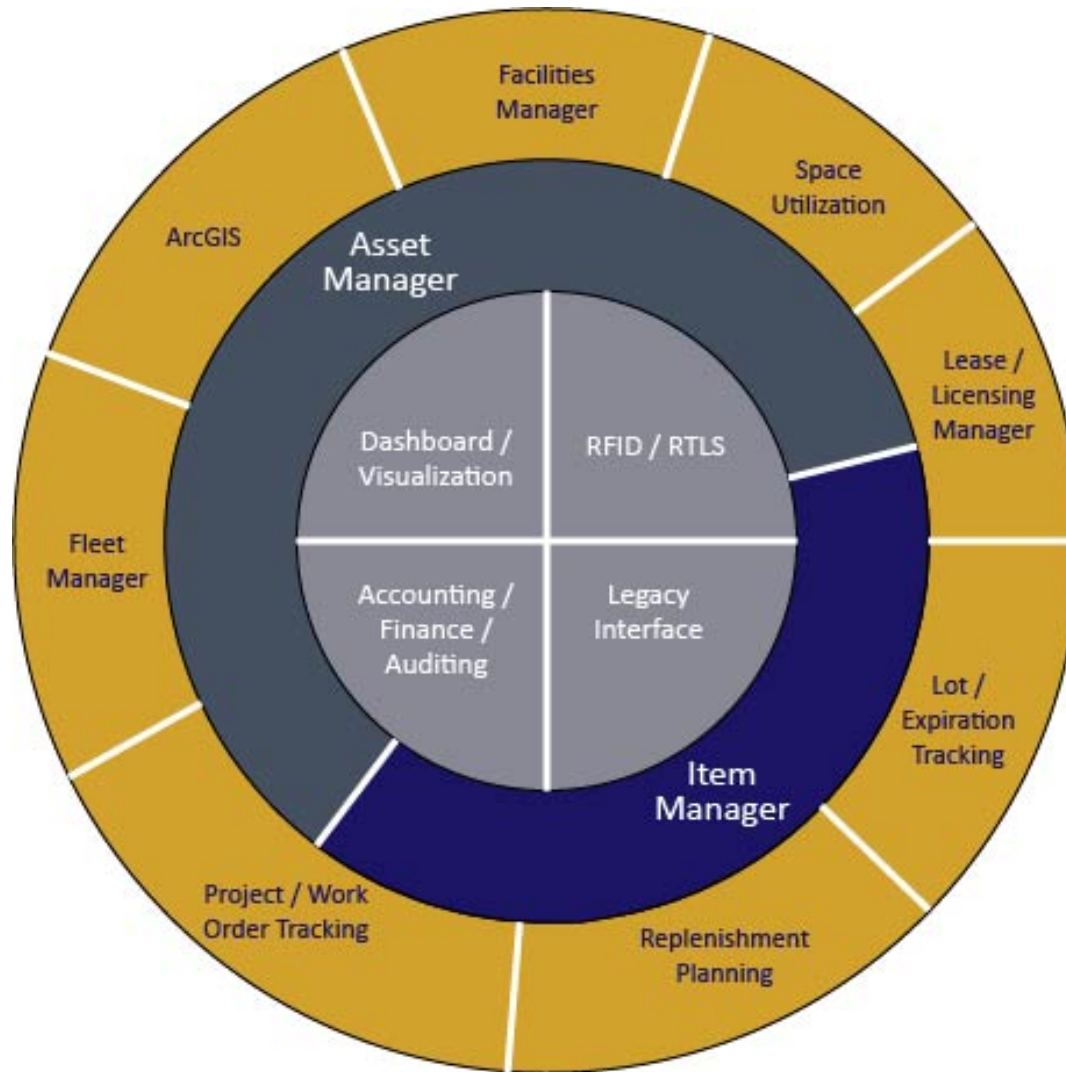
Partnerships with:



Primary Contracts:



AVA™ Enterprise Manager Functional Components



AVA™ Manager Suite

Background:

AdvanTech, Inc. is proud to unveil our **AVA™ Manager Suite**. These applications are all based on three guiding principles of:

Accuracy, **V**isibility and **A**ccountability.

These applications are browser-based, online, real-time using standard browsers and rely on a central encrypted relational database located in Annapolis or at your site.

Our systems are in operation throughout the U.S in multiple industries. Our goal is to assist our clients achieve substantial savings through implementation of advanced technology and best operational practices.

AVA™ Asset Manager:

Defines facilities to the room level. Tracks assets (moveable and fixed) to the serial number level to individual rooms. Assigned ownership of each room within each facility. Establishes and tracks projects and work orders to document and monitor labor and non-labor costs. Automates the internal package delivery process by defining delivery routes and building manifests to deliver within the organization. Track employees, contractors and visitors who have access to assets. Performs physical inventory counting and reconciliation processes. Generates numerous operational and accounting reports.

AVA™ Item Manager:

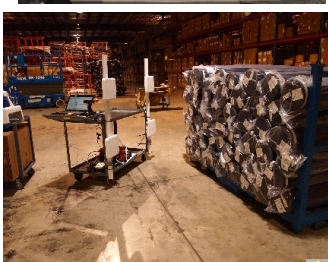
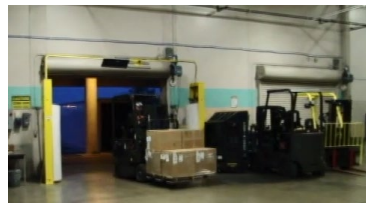
Fully-featured, multi-entity, procurement, requisitioning, receiving, remote inventory, cross leveling and perpetual inventory management system. Full audit trails with transaction history. Multiple stockrooms allowed with individual reorder parameters established. Asset visibility option to include inventory levels from prime suppliers. Serial and lot number tracking available.

AVA™ RFID Tag Manager:

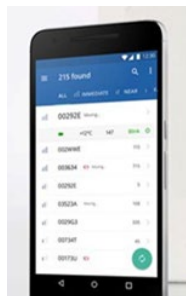
Upgrades Asset and Item Manager Applications to utilize RFID tags. Various RFID tag standards are supported including EPC Gen2 and Low-Energy Bluetooth. Tags are used for access control, in supply chain management to track inventory movement, to track files, laundry, garments, equipment assets such as wheelchairs, and high-cost or high-loss items such as electronics or tools.

Automated Data Capture Technologies

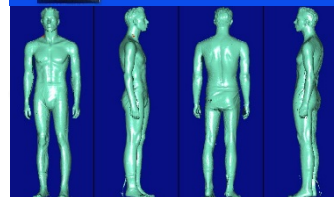
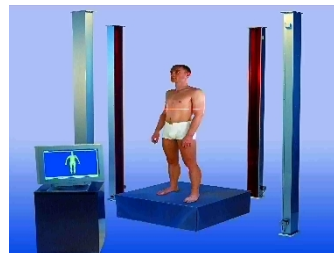
RFID



LEB / RTLS



Measuring Devices



Whole Body Scanning



Kinect



Foot Scanning



Hand Measuring

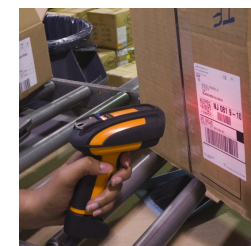
Others



OCR



Voice Recognition



Bar Code

AdvanTech's Fully Integrated Solution



System Architecture and Network Design

Software Functionality



AVA™ Item Manager

Standard Functions:

- Single Master Catalog
- Unlimited Individual Stockrooms
- Visibility Of Prime Vendor On Hand Balances
- Cross Leveling
- Replenishment Of Remote Department-based Stockrooms
- Automated Replenishment Level Calculations
- Automated Replenishment Orders
- Real Time Inventory Updates
- On Demand Inventory Status And Expediting Reports
- Multiple Inventory Valuation Formulas
- Receiving And Put Away
- General Ledger Interface For Posting Financial Transactions
- Comprehensive Physical Inventory, Cycle Count And Reconciliation
- Detailed, Read Only Transaction History
- Barcode Enabled
- Remote Departmental Requisitioning
- Performance Management Reporting
- Incorporated Non-stocked / Special Order Items

Other Available Functions:

- RFID Integration
- Serial Number / Lot Number Tracking
- Asset Tracking And Real Time Location System (RTLS)
- Electronic Advanced Shipping Notice To Automate Receipt Verifications
- Package Tracking

Interfaced Systems

Listed below are the Systems AdvanTech AVA Systems have interfaced with



AVA™ Asset Manager – Equipment Tracking

Facilities / Building

Facility Type

Floors

Rooms

Room Usage

Square Footage

RFID / Barcode Assigned

Systems

Asset / Item Master

Manufacturer

Model Number

Purchased From

Purchase Cost

Serial Number

RFID / Barcode Assigned

PO Number

Date Acquired

Data into Service

- Room Inventory
- Transaction History
- Utilization History

AVA™ Asset Manager – Questions???

Facilities:

- What Facilities are included in my Organization?
- Who occupies my Facilities?
- What are the areas in Facilities used for?
- Blueprints and other document stored online linked to facility, floor and room.
- Fire Escape documentation.

Assets / Equipment:

- What assets are in my Organization?
- Where are these assets within my Facilities?
- Who owns these assets?
- What assets are out of service and for how long?
- What assets have just arrived into my Organization?
- What assets have excessive repair and maintenance costs?
- When were the assets last counted and reconciled?
- Which assets are owned versus leased or on consignment?
- How do I dispose of obsolete and unusable assets?
- What are my current depreciation amounts?
- Replace vs Repair decisions

Projects / Work Orders:

- What Projects and Work Orders are still open?
- What Projects and Work Order are being planned and/or approved?
- What are the budgets for these Project and Work Orders?
- Who is performing the work?
- Where is the work being performed (on/off site)?

People:

- Roles of Staff within organization.
- Visitor and Contractors allowed into the Facilities.
- Certifications of Staff using or repairing Facilities or Assets.
- How can I limit access to specific areas by Staff and Visitors?

AVA™ Asset Manager – Project Tracking

Facilities / Building

Facility Type

Floors

Rooms

Room Usage

Square Footage

RFID / Barcode Assigned

Systems

Projects

Classification

Priority

Description

Status

Asset / Item Master

Manufacturer

Model Number

Purchased From

Purchase Cost

Serial Number

RFID / Barcode Assigned

PO Number

Date Acquired

Data into Service

Work Orders

Category

Priority

Description

Status

AVA™ Asset Manager – People Tracking

Facilities / Building

Facility Type

Floors

Rooms

Room Usage

Square Footage

RFID / Barcode Assigned

Systems



People

Staff / Employees

Contractors

Visitors / Patients / Students

Department

RFID Tag ID



Facility Location (Building / Room)

Work Order Costing

Location Validation

AVA™ Asset Manager – Delivery Tracking

Facilities / Building

Facility Type

Floors

Rooms

Room Usage

Square Footage

RFID / Barcode Assigned

Systems

Asset / Item Master

Manufacturer

Model Number

Purchased From

Purchase Cost

Serial Number

RFID / Barcode Assigned

PO Number

Date Acquired

Data into Service

- **Generate Delivery Bar Code Label**
- **Stage deliveries by Delivery Zone**
- **Generate Delivery Manifest for Delivery Zone**
- **Electronic Signature with time and date stamp**

RFID Overview – Technologies Available

Category

Specifications

Reading Range

GPS

- Transmitter
- Satellite Reader
- Satellite Receiver



Active RFID

- Reusable Transmitter with internal power source
- Multiple Fixed Readers
- Extension of LAN / WAN



Low Energy Bluetooth

- Reusable Transmitter with internal power source
- Smaller Form Factor than Active RFID
- Smartphone Compatible

Passive RFID

- Disposable Transmitter with external power source
- Fixed Reader with Multiple Antennas and/or Handheld Readers



RFID Overview – Technologies Available

GPS



Tractor Trailer



Shipping Container



ForkLifts

Active RFID



Toll Pass



Metal Containers



Refrigeration Units



Moveable Assets

Low Energy Bluetooth



Pallets w/ Boxes



Cartons / Boxes



Apparel



Firearms



Staff/
Visitors



Document / Records /
Books

RFID Overview – Passive RFID Components



RFID Printer / Encoder



Permanent Tags



Fixed Reader and Antennas

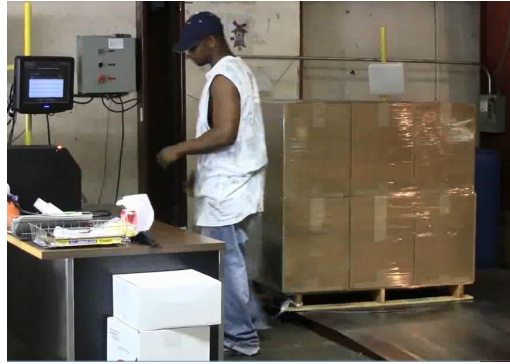


RFID Tag/Label



Handheld Reader

RFID Overview – pRFID Reader Configurations

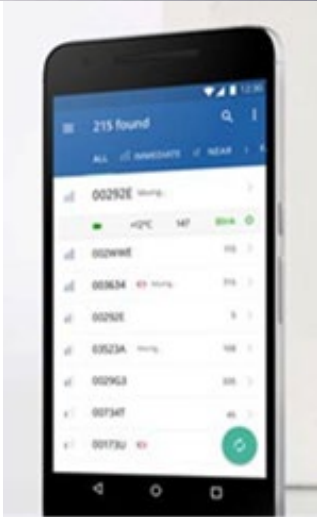


Low Energy Bluetooth Solutions

AdvanTech, Inc.

Low Energy Bluetooth Solutions

Our product is a solution that includes beacons, readers, apps, and software to track assets in warehouses, yards, offices, hospitals, etc.



Readers



Beacons / Tags

Deploys rapidly

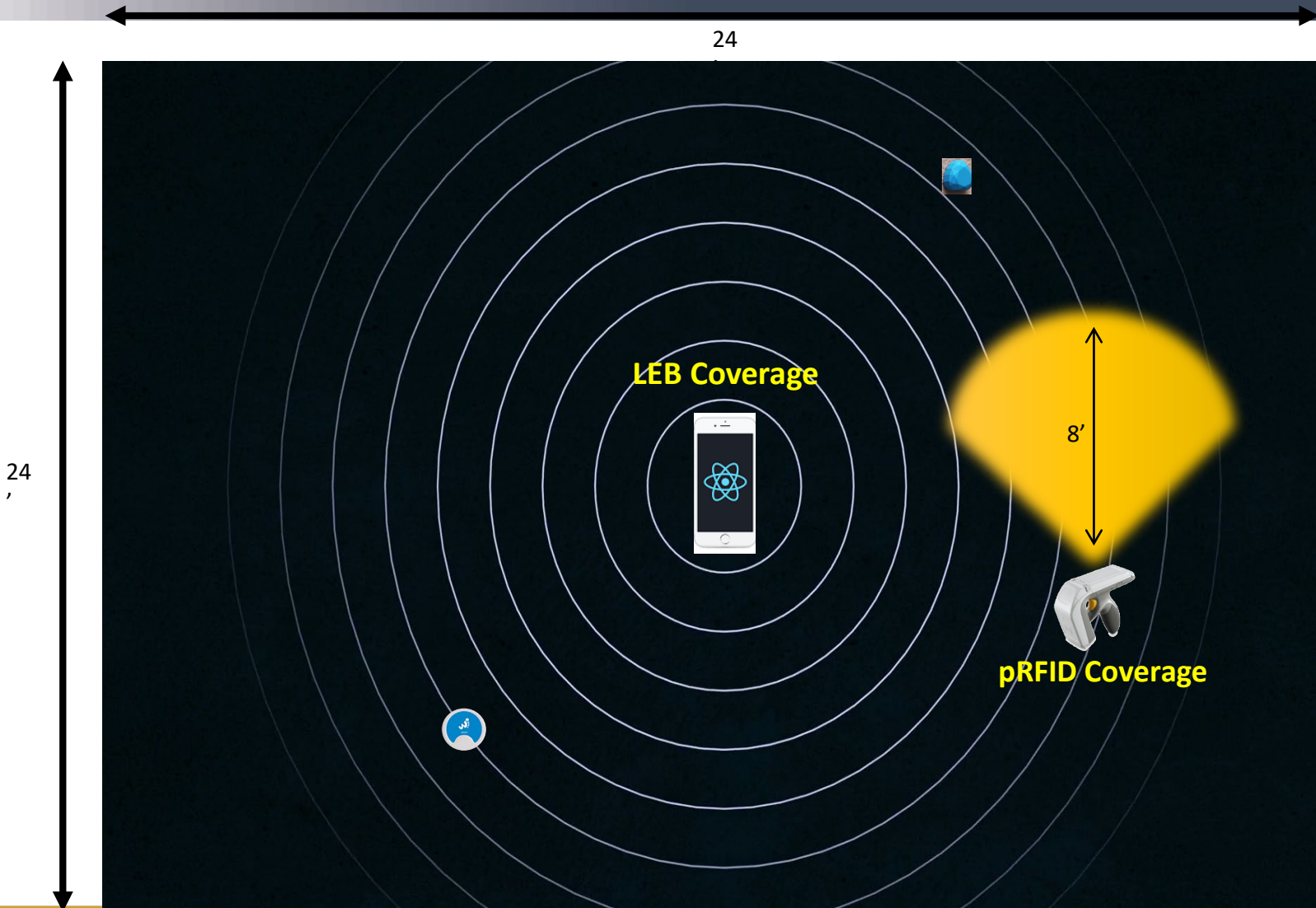
• Analyzes data

• Smart notifications

Automated Data Capture Performance Matrix

Technology	Cost	Reading Distance	Read Direction	Triangulation	Facility/ Structural Limitations	Automated Reading	Network Required
Barcodes	Less than \$0.03 per tag/label	Under 18 inches	Line of Sight	No	Yes	Conveyor Required	Ethernet / WiFi
Passive RFID	Between \$0.10 and \$8.00	Under 32 Feet	Conical	No	Yes	With Fixed Readers	Ethernet / WiFi
LEB	Between \$15.00 and \$50.00	Up to 300 feet	Spherical	Yes	No	With Fixed Readers	Mesh
Active	Over \$65.00	Up to 500 feet	Spherical	Yes	Exterior Locations Only	With Fixed Readers	Mesh

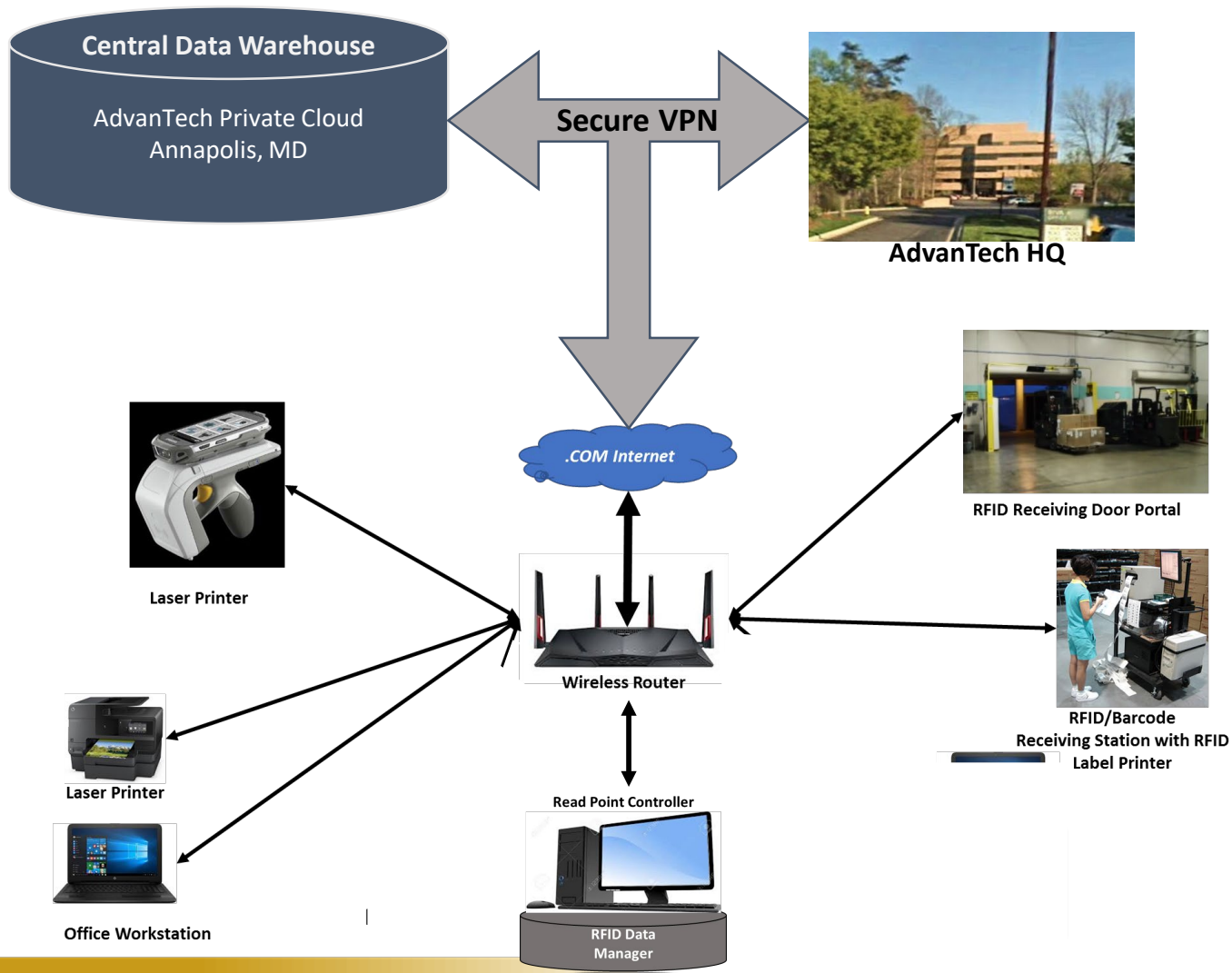
RFID Tag Location (pRFID vs LEB)



Hardware Cost Comparison (pRFID vs LEB)

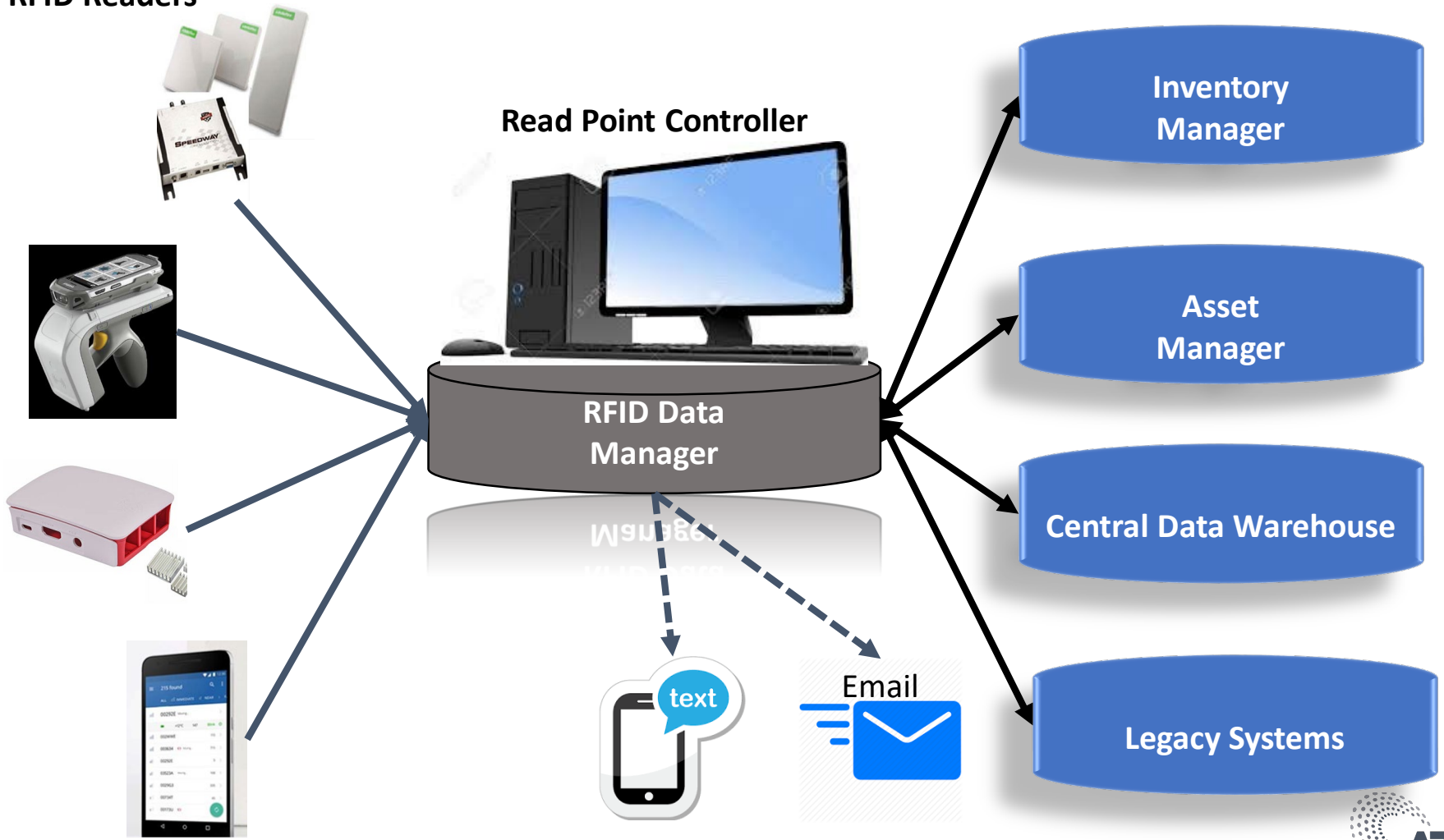
	Tags for Pieces of Equipment (300)	RFID Printer / Encoder (1)	Fixed RFID Readers for 10 areas (20)	Handheld RFID Readers (2)
Passive RFID \$46,880	\$500	\$2,780	\$40,000	\$3,600
Low Energy Bluetooth \$17,000 (\$29,880)	\$5,000 Higher Tag Cost Larger Read Range	\$0.00 Printer not Required	\$12,000 Lower Reader Cost No visible Antennas	\$0.00 Smart Phone Application

RFID Overview – RFID Architecture



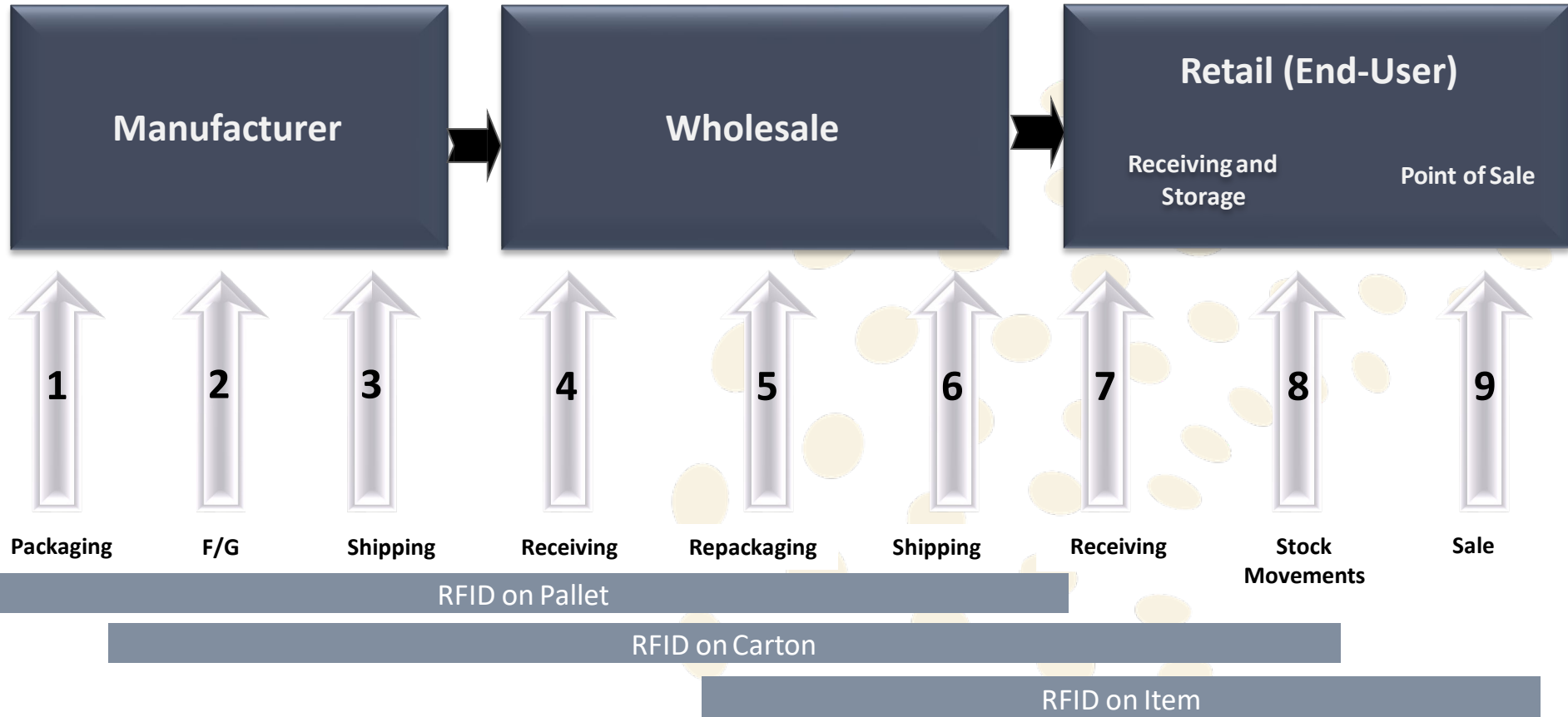
RFID Overview – RFID Architecture

RFID Readers

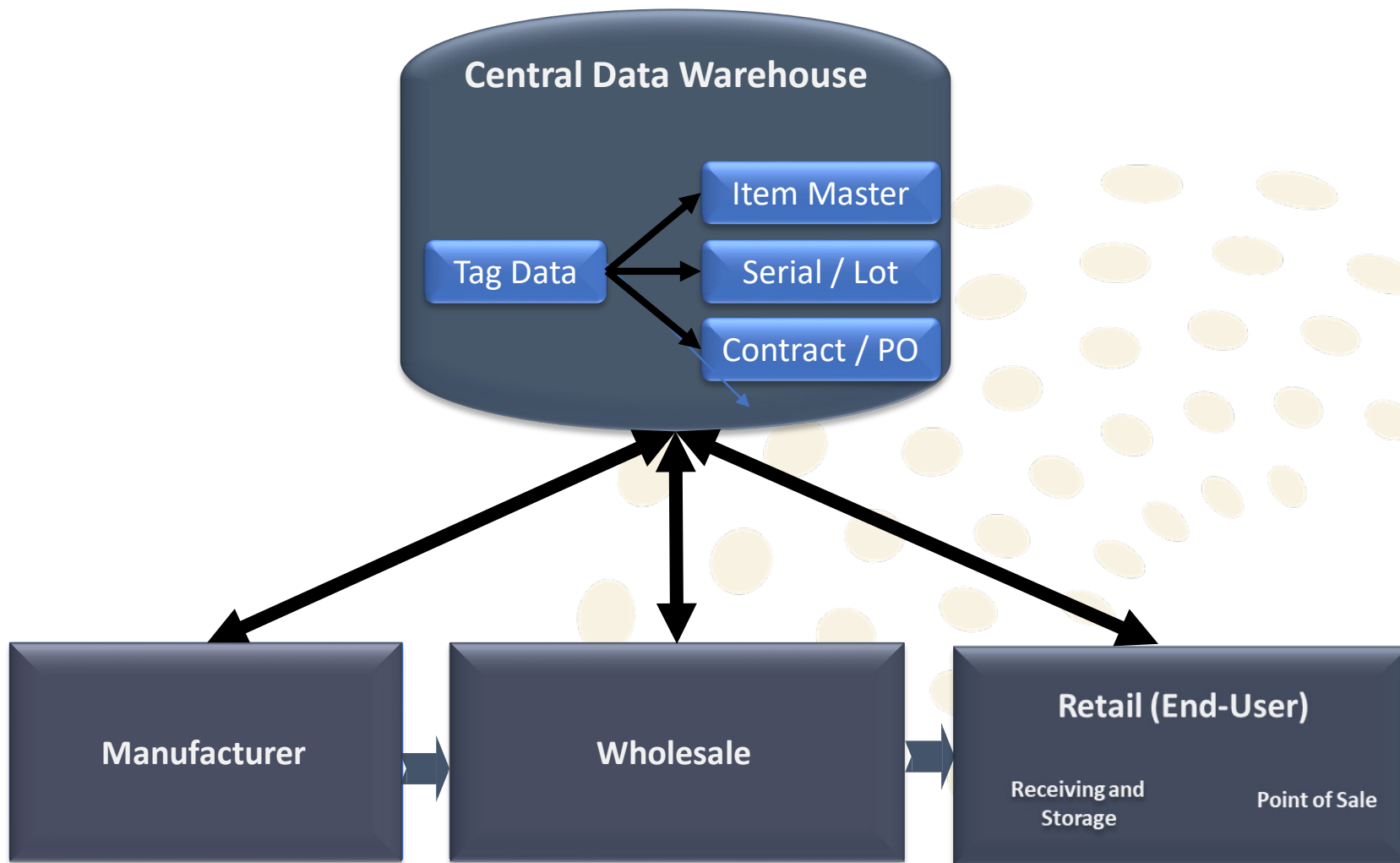


End to End Supply Chain Integration Process

Points of RFID Integration



RFID Overview – Shared Integration



Documented Operational Improvements

Operational Activity	Documented Results
Production Control	Reduced Quality Checks by 20 hours per week
Receiving	Reduced Receiving Time to 20 Minutes from 3 hours
Point of Sale	Processed Platoon of 50 Recruits in 1 hour down from 2.5 hours
Physical Inventory Counting	Reduced Counting Time to 6 hours from 2 days
Physical Inventory Variance	Variances reduced to 0.18% from 5%-8%

Thank you for your Interest