Armory Management System

"RFID Weapon Inventory and Maintenance Management"

Overview

Armory management system controls weapon inventory and improves the processes for Issuance, Receipt and Maintenance.

RFID improves the automation and auditability of these processes.

Objectives

- Firearms visibility

- Weapon Status information

- Automated authorization

- Accelerate periodic checks

- Auditable firearms movement
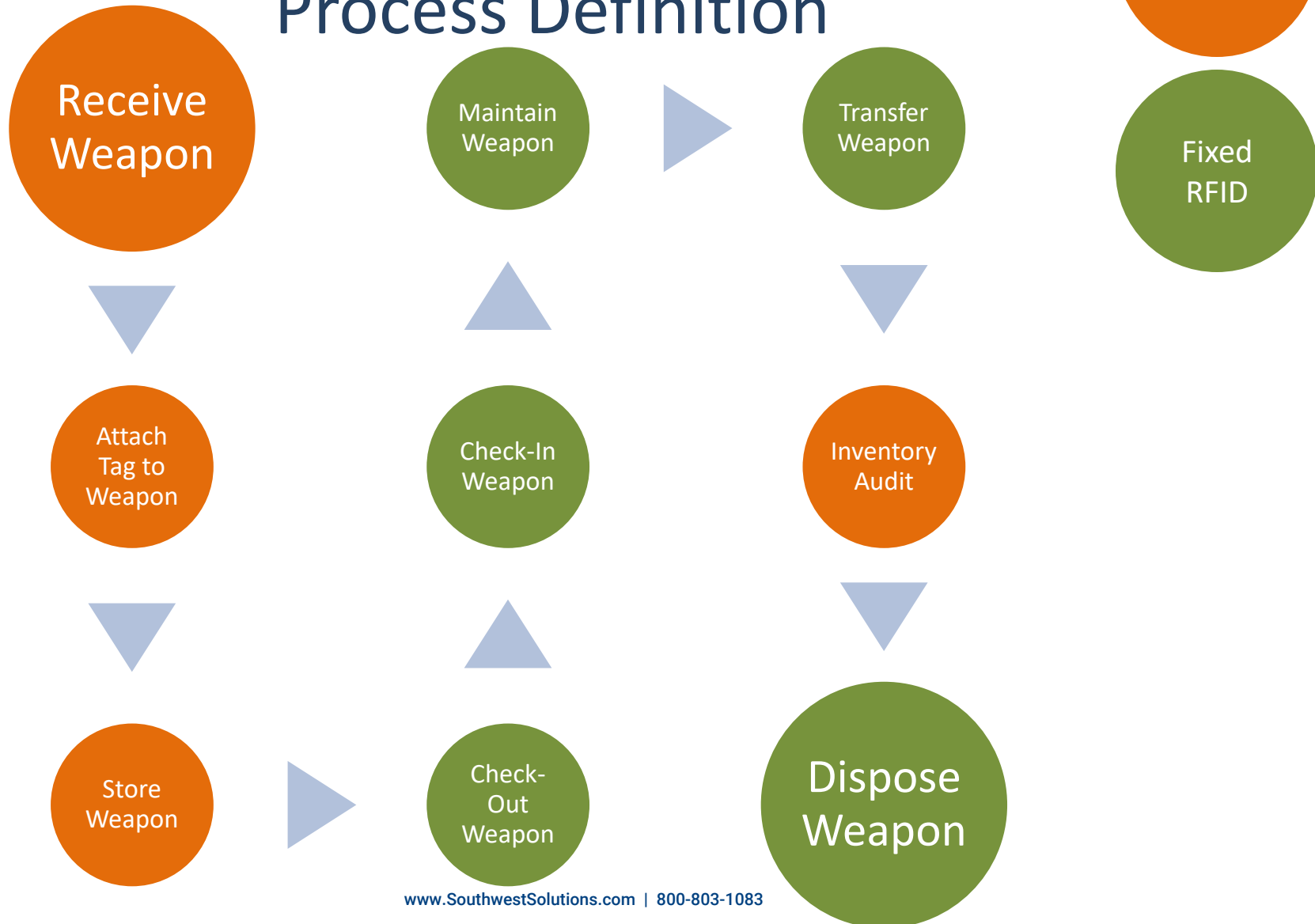
- Effective analysis reports

Why RFID?

- Passive RFID tags on weapons provides:
  - Unique ID associated with weapons
  - Small in size, can be fitted easily
  - Multiple weapons can be detected at the same time (Accelerates inventory checks)
  - No power source required
  - Real Time Logging
  - Weapons can be detected through RFID Checkpoints (Exits/Entrances)
- Can be used for other equipment when required

Weapons Tracking using RFID Process Definition

Mobile RFID

Receive Weapon

Maintain Weapon

Transfer Weapon

Fixed RFID

Attach Tag to Weapon

Check-In Weapon

Inventory Audit

Store Weapon

Check-Out Weapon

Dispose Weapon

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Firearm Tags

- ## Considerations
  - o Not a one tag fits all solutions
  - o Tag location on weapon should not interfere with the weapon's handling and operation.

- ## Tag Selection
  - o Long range Passive RFID tags

- ## Tagging the weapons
  - o RFID Tags shall be attached to weapons using a strong adhesive
  - o Self adhesive tags could be used for pilot project

Knights Armor SR-25

Colt M203

Weapons Tracking using RFID Tags – Pistols

Officers Identification Card

- Characteristics
  - Printable using card printer
  - Standard: ISO/IEC 7810 ID-1
  - Embedded RFID chip
- Technology
  - UHF RFID Cards
- Reading Range
  - BAP: Up to 20 meters when visible
  - Passive: 3 to 5 meters
- Purpose
  - These cards shall be used to automatically identify the officer receiving or returning the weapon to enforce authorization process

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RFID Station

- ## RFID Station
  - o RFID reader
  - o RFID Antenna

- ## Coverage
  - o The RFID station shall cover the area where the weapons are being issued and received

- ## Purpose
  - o Hands free identification
  - o Detects weapon and officer RFID tag
  - o Relay detected tags to system

RFID Reader

RFID Antenna

Handheld device

- Features
  - Tag Weapons
  - Assign Tag to Officers
  - Weapon Periodic check
  - Officer/Weapon authorization Check
  - Specific Weapon Search
  - Application Synchronization

- Capabilities
  - Mobility
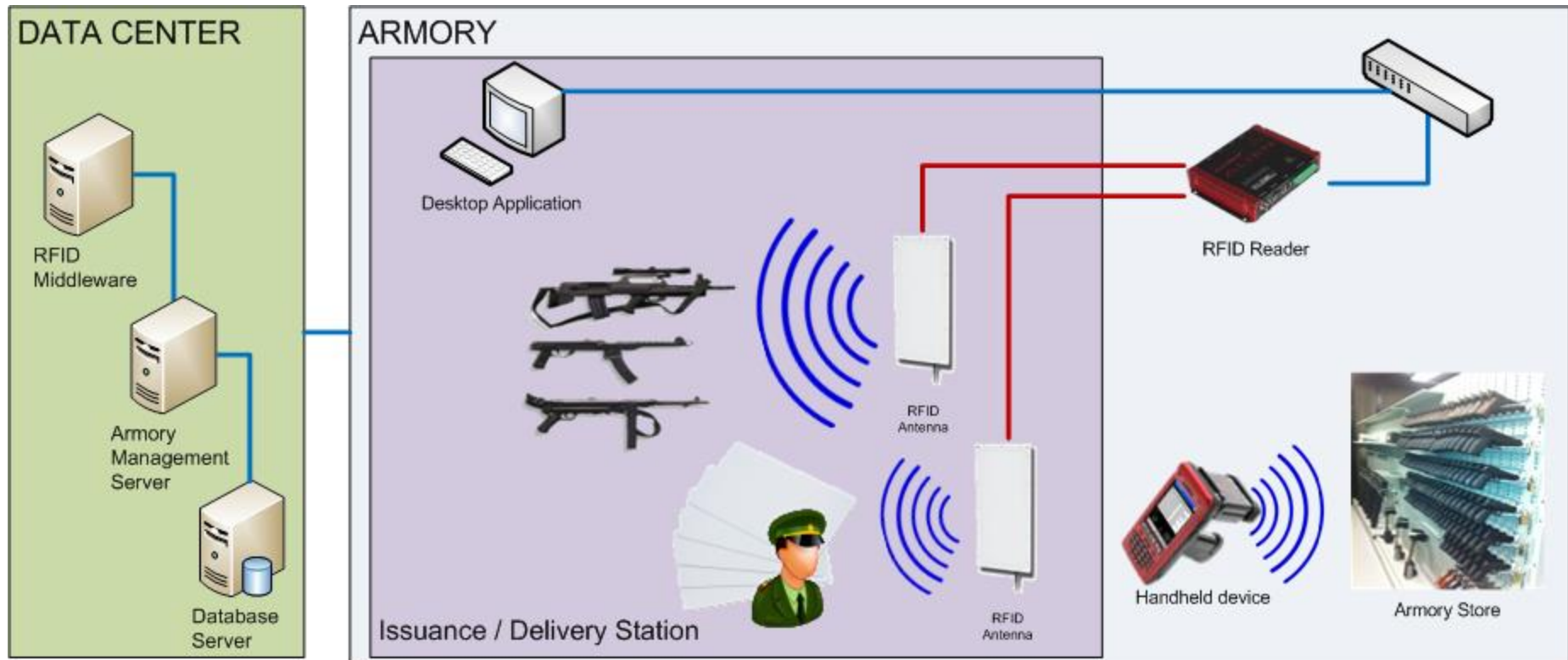 - Works online and offline
  - RFID tag reading

Software Application

- Features
  - o Administer authorizations
  - o Weapon Issue
  - o Weapon Receipt
  - o Fault Reporting
  - o Periodic Checks
  - o Inventory Control
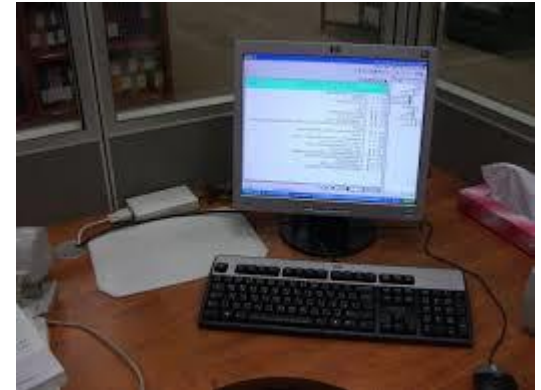 - o Reporting

System Infrastructure

Functionalities

Handheld Device Application

- Weapon Tagging
- Weapon Tag swap
- Periodic Weapon Check
- Fault Reporting

Fixed Station

- Weapon Issue
- Weapon Receipt
- Reporting

Flexible & Localized Screens

Reports

- **Weapons Currently Issued**
  - o Lists weapons currently issued to officers

- **Inventory**
  - o Lists all the tagged weapons logged into the system held by the armory

- **Weapons due for Maintenance**
  - o Lists weapons highlighted for maintenance

- **Transaction History**
  - o Lists weapon issue and returns history

Reports

- **Unauthorized Issuing**
  - o Report of weapons issued where authority was overridden

- **Faulty Weapons**
  - o Lists weapons reported as defective.

- **Officer History**
  - o Lists the transactions made by a particular officer.
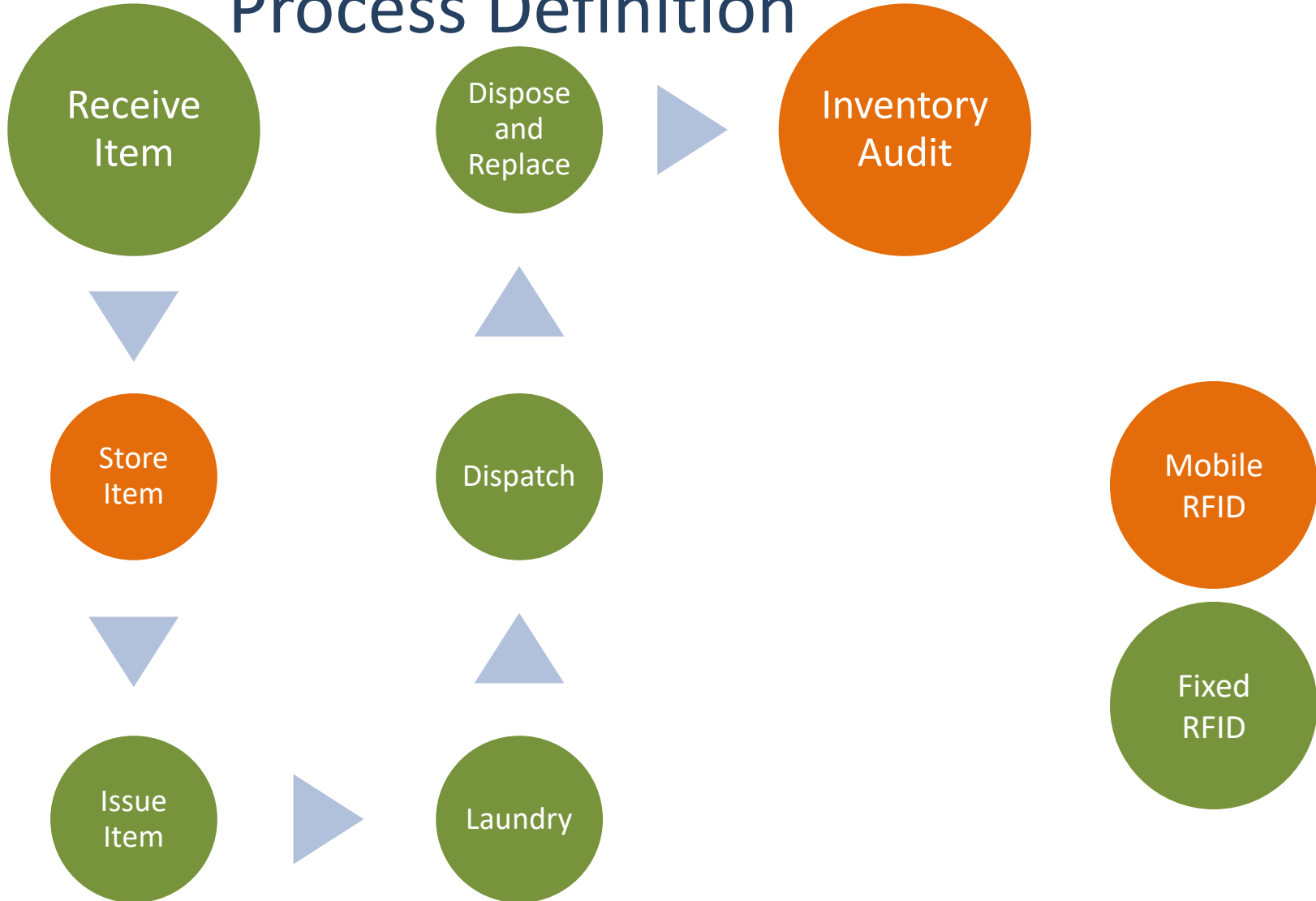
Uniform Tracking

Uniform Tracking using RFID

- Embedded RFID tag is placed on uniform items by the supplier. The tag could be:
  - Button
  - Wash Label
  - Patch
- The tag holds the item's SKU and a Serial#, insuring that every uniform/item is UNIQUE.
- RFID is used to track all uniform items in all stages of the process:
  - Issuing, Laundry, Replacement, Dispatch

Uniform Tracking using RFID Process Definition

Weapons Tracking using RFID
Results and Benefits

- 100% traceability of all items.

- Completely automated and traceable operation from entry to exit.

- Minimal human intervention with the system – minimal chances for human error.

- 10+ years life expectancy with all tags used.

Additional Capabilities

- Centralized Armory management

- Critical Entry / Exit Management

- Ammunition stock management

- CCTV & Access Control Integration

- Biometric Weapon issuance / return validation

- Automated authorization forms