

# A Defence perspective on RFID

Kempton Cannons  
Business Development Director  
Savi Technology

*Proven RFID Solutions Driving Value*

# The USA has lead Defence interest in the application of RFID for 16 years

The DoD has lead the way on the large scale application of RFID in Defence

- **1990-91** DARPA grant to research how automatic identification and data collection technologies
- **1994** First DoD RFID procurement contract awarded to build real-time wireless monitoring
- **1994-01** Somalia, Haiti, Bosnia, Afghanistan
- **1996** DoD could have **saved \$2 Billion** in costs if AIT/RFID were used in Desert Storm (“Just-in-Case Logistics”) – **GAO Report**
- **2002** AIT/RFID required for all U.S. military branches
- **2003** “Everything” tagged for Operation Iraqi Freedom
- **2004** DoD RFID / EPC Policy for all services and suppliers

Other Governments and Defence suppliers have implemented technology in support of specific conflicts, mandates and force goals

- UK MoD Operation Telic
- NATO force goal
- Interoperability in Afghanistan



# Early implementations focused on the deployment of fixed infrastructure



## Fixed Readers

- Permanent Unmanned RFID Consignment Tracking
- Gates
- Intersections
- Requires Fixed Power Supply and Network Access



# The high tempo and scope of operations has lead to increased demand for portable infrastructure

- **Portable Kit To Support Temporary Manned & Unmanned Remote RFID Consignment Tracking Operations.**
  - Provides visibility of consignment dispatch, receipt & count at deployed sites.
  - Supports RFID tag read/write, consignment searching and shipment label printing
- **Standard equipment features include :**
  - Ultra-durable case (7ft. drop test, 1-man lift)
  - Rugged Laptop : (MIL-STD-810 shock/vibration)
  - Site Manager (with SMR Reader), CMS Write Station, CMS Mobile Devices
  - External connectors for power, SatCOMM, GPS, & RS-232 for SMR-650P-110
  - Iridium Satellite Backhaul/w GPS
  - Externally powered by +12 or +24 VDC
- **For use in austere, remote locations - ideal for military, "in-the-field", and last mile sites.**



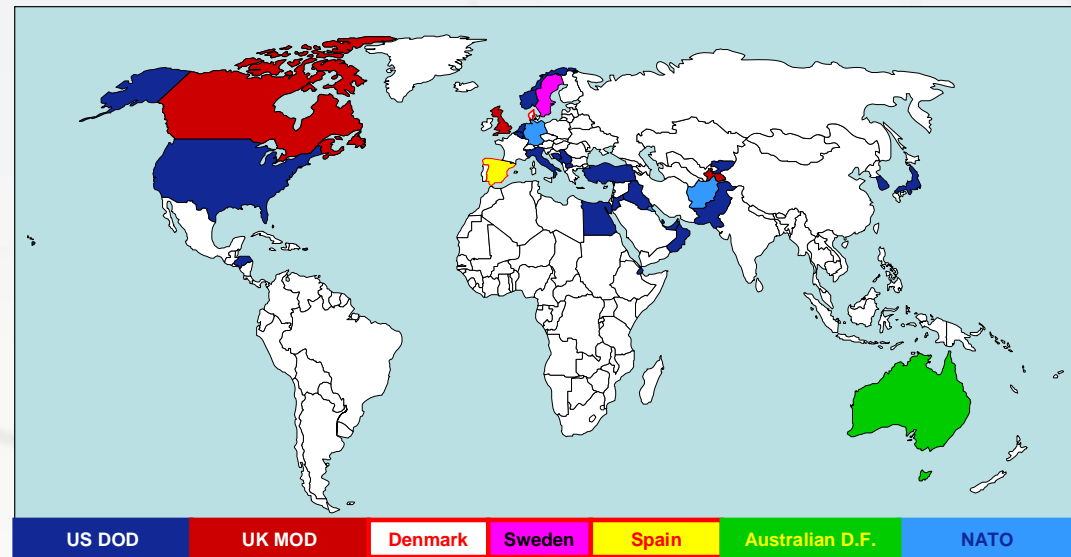
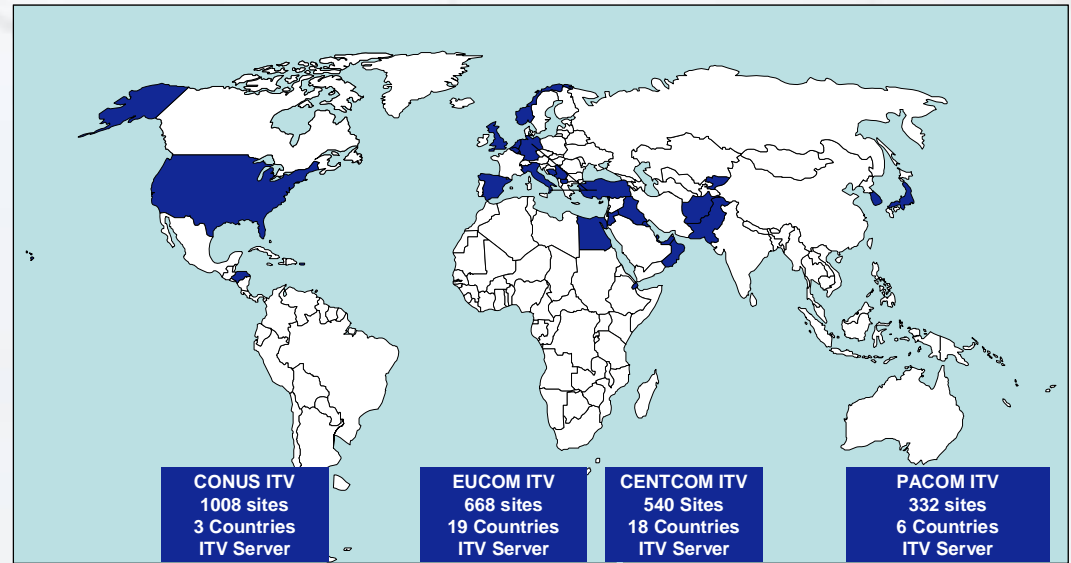
The screenshot shows the CMS Write Station software interface. The window title is "CMS Write Station" and it has a menu bar with "File", "Edit", and "Help". Below the menu bar are several buttons: "Collect Tags", "Create/Update Consignment", "Read from Tag", and "Initialize Tag". The main area contains a table with the following columns: "Tag ID", "Data", "Batt. Status", "Reader ID", "No. Times", "Manifest File", and "Status". The table contains 15 rows of data, all with a "Status" of "Not Assigned".

Tag ID	Data	Batt. Status	Reader ID	No. Times	Manifest File	Status
358969	..123456...	OK	04071911	1	Not Assigned	n/a
402275	..\$M1..II...	OK	04071911	1	Not Assigned	n/a
406112	@.....	OK	04071911	1	Not Assigned	n/a
510380	..\$M1..II...	OK	04071911	1	Not Assigned	n/a
850737	..123456...	OK	04071911	1	Not Assigned	n/a
850928	.....	OK	04071911	1	Not Assigned	n/a
850935	..Rphys G...	OK	04071911	1	Not Assigned	n/a
852714	..\$M1..II...	OK	04071911	1	Not Assigned	n/a
852735	..\$M1..II...	OK	04071911	1	Not Assigned	n/a
862946	..\$M1gh...	OK	04071911	1	Not Assigned	n/a
5083251	.....	OK	04071911	1	Not Assigned	n/a
5242900	..012345...	OK	04071911	1	Not Assigned	n/a
5245880	.....	OK	04071911	1	Not Assigned	n/a
6874345	..\$M1..II...	OK	04071911	1	Not Assigned	n/a

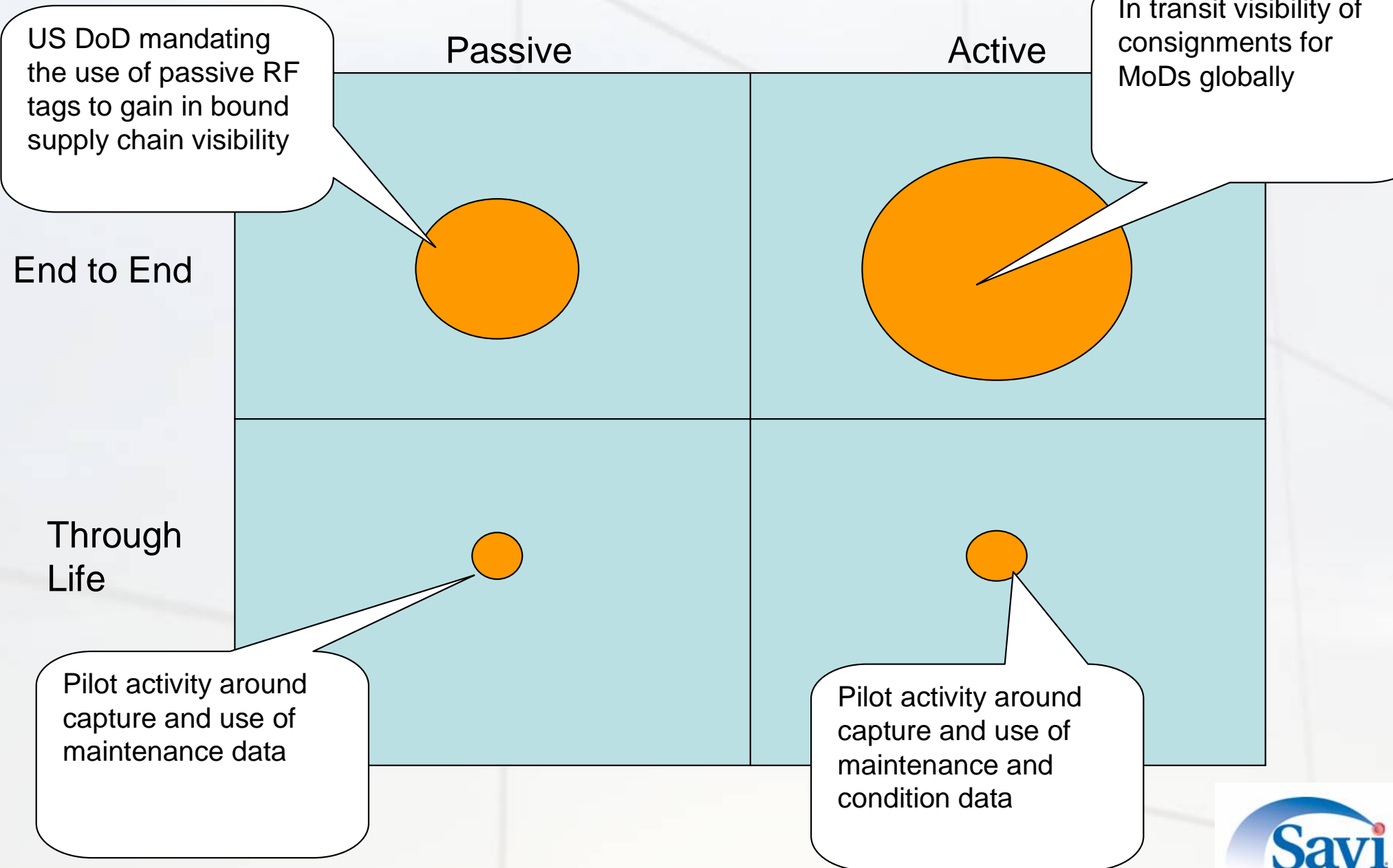
The status bar at the bottom shows the current reader ID as "04071911" and the message "Collecting Tags with 50 bytes gate data...". There is a "Stop" button in the bottom right corner.

# There is now a global interoperable network of Active RFID tags and readers

- US
    - Largest Active RFID network in the world
    - Passive mandate for suppliers
  - UK
  - Australia
  - Denmark
  - Sweden
  - Spain
  - NATO
- Active Consignment Tracking implementations
- Standards
    - ISO 18000-7 (Active)
    - EPC Gen 2 (Passive)



# The focus in defence remains consignment visibility within the supply chain



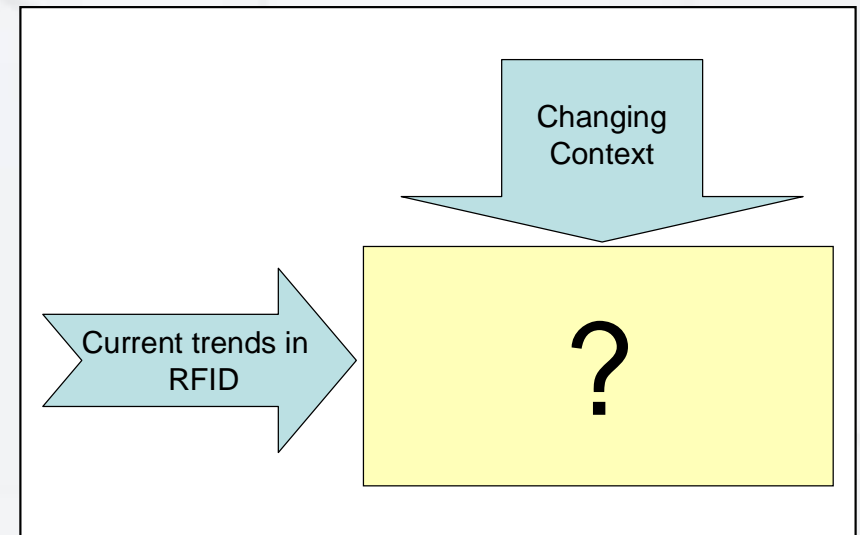
# What does the future hold?

## Current trends

- Consignment tracking
- Condition monitoring
- Supply Chain asset monitoring
- AID Technology integration

## Changing context

- Budgetary pressure only gets worse
- Continued high tempo and scope of operations
- Outsource more of support provision
- Technology will ease integration of information across partners and technologies
- Technology will ease ubiquity of RFID
- Increased Through Life Capability Management



***Increased breadth and depth of solutions to ensure optimum value for money for Defence***

# The breadth of application will increase to optimise performance against a continually decreasing budget

- Integration with OEM supply chain
- Further forward – agility, flexibility, reduced footprint – smaller deployable kits and range of communication options
- Leverage other networks where required
  - Military – interoperation with allies
  - Civilian – interoperation with networks such as Savi Networks
- Leverage other technologies where required
  - Integration with GPS, GPRS, Passive, Bar codes etc
- Wider application
  - Non operational materiel
  - People
  - Assets





# The functional depth of tags will continue to increase to deliver a more effective and efficient Defence supply chain.

- Environmental monitoring
  - Combines consignment and asset tracking with environmental monitoring
  - container door tamper
  - temperature
  - humidity
  - shock
  - User definable alarm thresholds and sampling intervals
- Asset management
  - Tactical wheeled vehicles
  - Major components
  - Increased availability
- Ammunition optimisation across technologies
  - In transit visibility
  - In transit environment monitoring
  - Base depot optimisation

Door Security



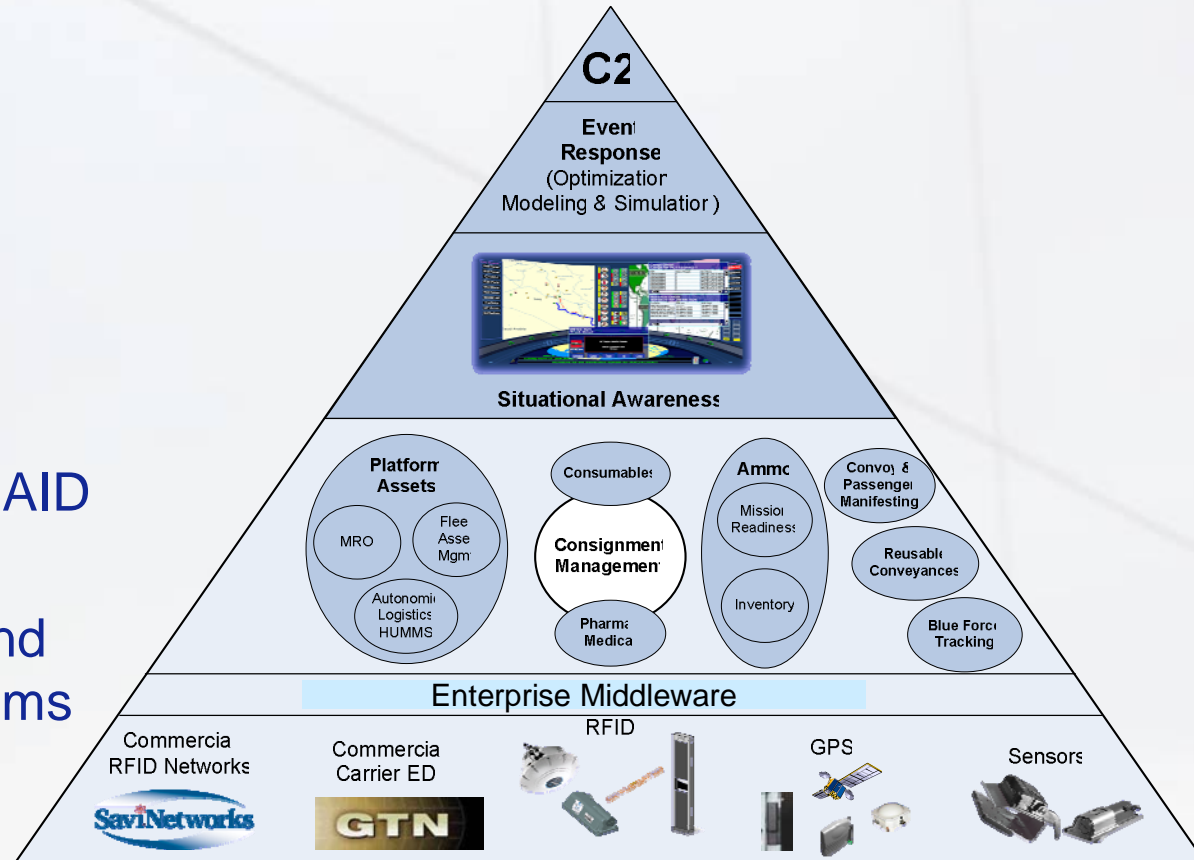
Engine Canisters

Medical Supplies



# The functional depth of supporting IS will continue to increase

- Increased functionality
  - Asset management
  - Consignment management
  - Condition monitoring
- Increased integration
  - Wide ranging and changing AID technologies
  - To Situational Awareness and Command and control systems



# Future situation

