



L

# Delivering A Usable Capability Rapidly

Joint Asset Management and Engineering Solutions

Lockheed Martin Simulation, Training & Support

Tony Guarino  
26 Aug 2008



L

# JAMES Overview

Joint Asset Management and Engineering Solutions

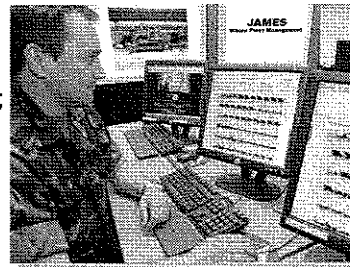


## JAMES Overview

L

- Lockheed Martin developed and fielded the Joint Asset Management and Engineering Solutions (JAMES) product for the British Army under a Firm Price contract in under 11 months
- JAMES provides real time asset visibility and management of all UK Army Ground equipment and their Operationally Significant Components using COTS Enterprise Resource Planning (ERP) software, and web enabled information sharing.
- Service Commencement Date was 30 May 2005
- Fielded to the 7th Mechanized Brigade July 2005.
- Roll out of the application continues to a new set of units every 6 weeks.
- Presently JAMES contains >45K equipments; >45K personnel; >5K users;
- Have made 9 releases since Service Commencement primarily to add Incremental additions to functionality

Over 1,000,000 Transactions To Date



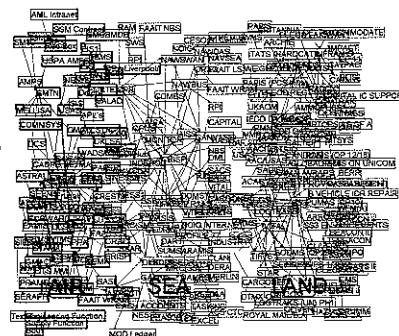
3



## JAMES – The Customer’s Concept

L

- “Operational Innovation” – Business (Process & Policy) change (at least convergence to best practice).
- Convergence to common processes across equipment and environments where possible.
- Allow for reduction in number of equipments at Units and use of controlled storage
- Permit more efficient and effective implementation and application of RCM and introduce a DRACAS.
- Where required, new Information Systems (IS) that absorb multiple existing IS, use COTS Software, open data standards and provide the user with a useful tool.
- Incremental implementation with achievable benefits.



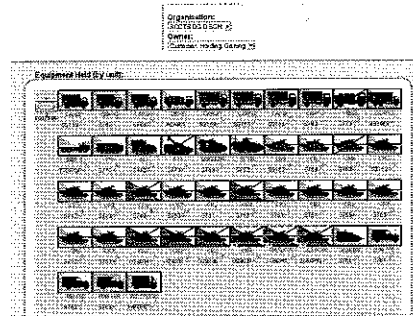
4



## JAMES1 Requirements

L

- What is it
- Where is it
- Who has it
- Who owns it
- What is its configuration
- What is planned for it
- What is it currently doing
- What is its usage
- When is it due for what maintenance
- What state is it in and if not Fit - why not
- When will it be Fit
- Train the user in one role in 4 hours or less (usability)
- Minimize skill fade
- Initially for In Barracks (DII access) with no external interfaces
- For British Army Land vehicles and related equipment
- Manual input of data

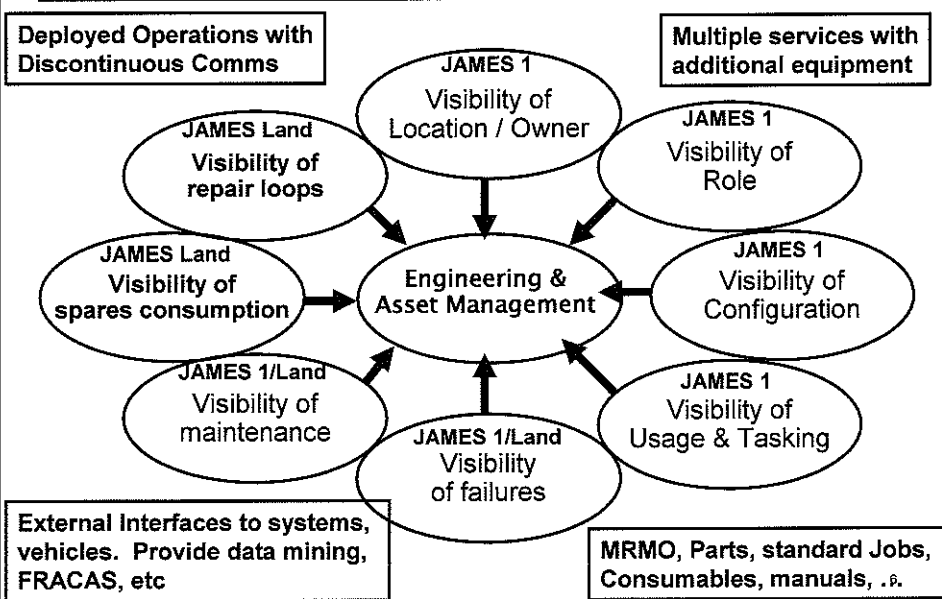


5



## JAMES1 Extended to JAMES LAND

L





## What is JAMES?

L

- Web Application
- Thin Client (no mobile code) to allow use on the Defence Information Infrastructure, a secure Intranet for the UK MoD.
- Role based access
- ERP solution using Industrial & Financial Solutions (IFS) running on an Oracle Database
- Extends the IFS ERP functionality
- Implements user's business processes
- Supports task based re-organization
- Includes a Help Desk and support to service incidents

Equipment Type	Location	Status
CARGO	...	...
AIRCRAFT	...	...
HELICOPTER	...	...
...	...	...

7



## What is JAMES – Part Two

L

- Uses Lockheed Martin COTS product Common Development Framework (CDF)
  - Buffering the user from the complexity of the native COTS application
  - Provide the ability to create a user business process driven user interface
- Intuitive user interface
  - JAMES mirrors the users processes
  - Graphical interface with drag and drop functionality
  - Reduces both training and skill fade

Recording Personnel Name: ... Recording Personnel ID: 1212 Fault ID: ...

Fault Group ID / Modification Number: ... Job Card Number: ...

Reported By: ... Fault Reported Date: ...

Fault Category: ... Fault Group: ...

Fault Condition: ... Fault State: ...

Estimated Repair Date: ... Required By Date: ...

Fault Description: ...

Repair Agency: ... Repairing Personnel: ...

Comments: ...

8



L

## What the User's Say

It's a very good piece of kit.  
It's common sense and  
makes things a lot simpler"

A roaring success ...  
universally positive

It's a good system and it  
cuts out the paperwork

For all my units it has  
improved equipment  
management ten fold.

It's a great system

For the first time  
commanders at all levels  
will get a picture of their  
entire fleet

Servicing cannot be ignored..  
Clear and unambiguous picture  
of what state the vehicles are in

It has made my life easier

This is the first time a system  
has been delivered that  
works straight away and  
provides me with a useful  
tool

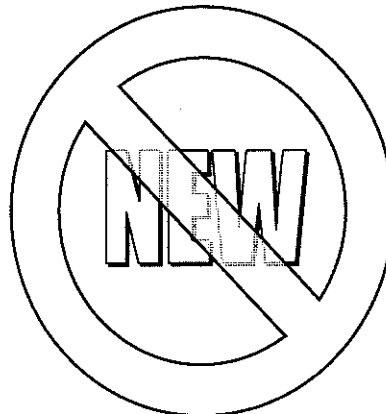
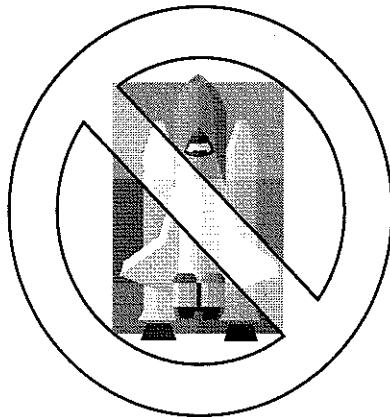
An improvement in  
planning of equipment  
maintenance, looking 3 or  
4 months ahead or more

9



L

## How JAMES was Achieved



10



L

JAMES

# JAMES - Addressing the Gap in Total Asset Visibility

Joint Asset Management and Engineering Solutions



Area of Interest

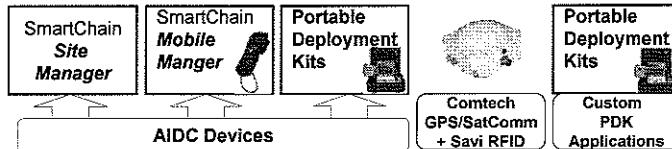
L

INDUSTRY (CLS)

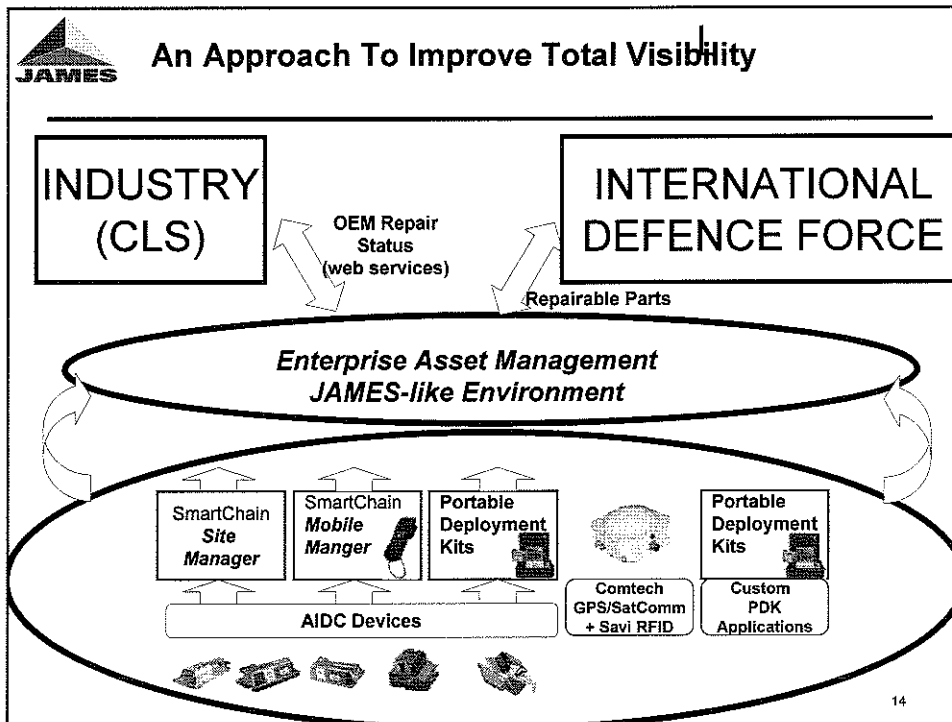
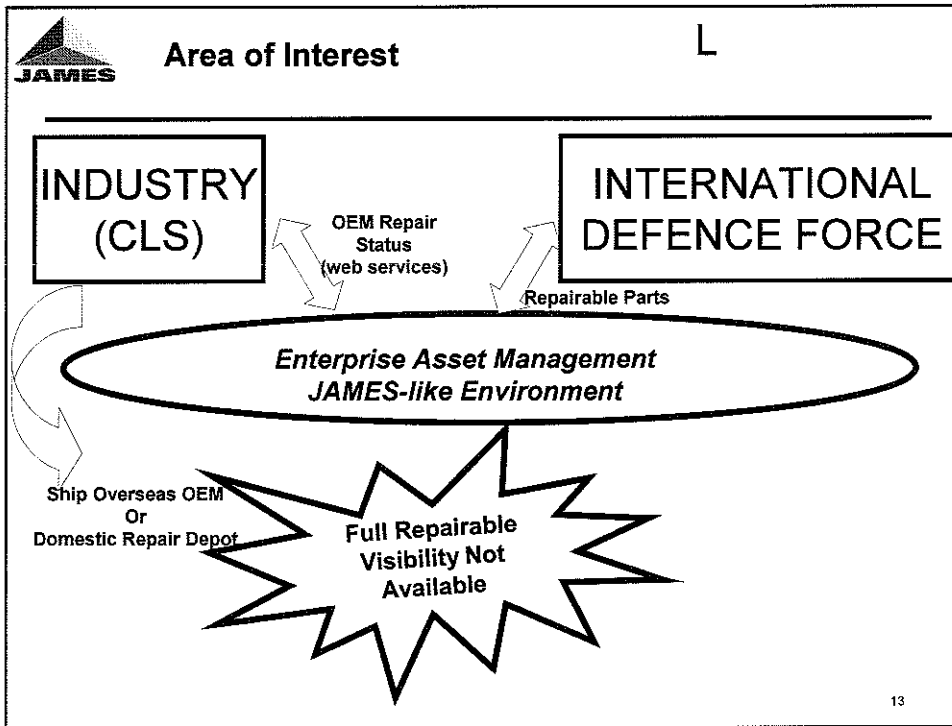
INTERNATIONAL DEFENCE FORCE

Repairable Parts

Ship Overseas OEM  
Or  
Domestic Repair Depot



12





# Rotables / Repairables Repair Loop

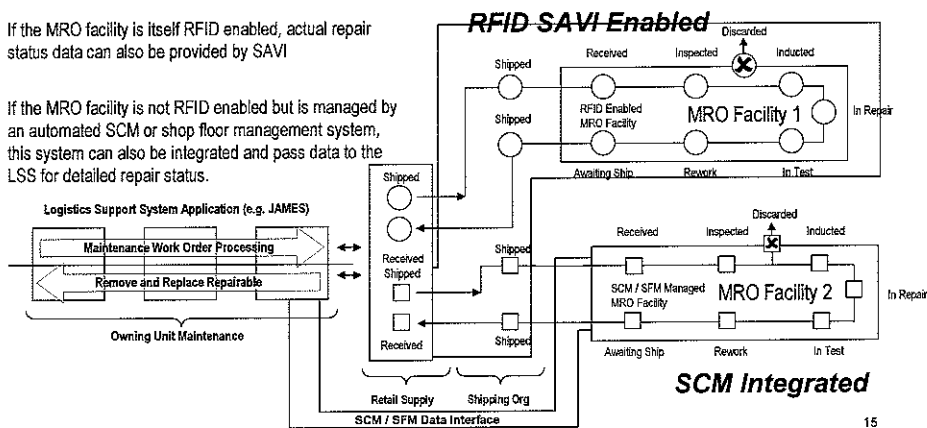
## Demonstrable Capability Specific to Remove and Replace Actions

- Implemented for Selected High Value or Pacing Items (AOG or ↓AV%)

The Logistics Support System (LSS – JAMES-like) will aggregate asset management data with ITV data coming from SAVI for rotables being shipped offsite for repair.

If the MRO facility is itself RFID enabled, actual repair status data can also be provided by SAVI

If the MRO facility is not RFID enabled but is managed by an automated SCM or shop floor management system, this system can also be integrated and pass data to the LSS for detailed repair status.



**ADP ASSET MANAGEMENT**

User: DANA of GDOTS CC  
User Role: Fleet Manager  
Local Time: 15:48 (GMT-4:hr)

HOME • LOGOUT • MY ACCOUNT • HELP

Equipment Configuration

	<b>ERM/Serial No:</b> S21514	<b>Description:</b> TANK COMBAT CHALLENGER 2	<b>Holding Unit:</b> SCOTS DS
LP2 S21514	<b>Asset Code:</b> H463043000		<b>Gaining Unit:</b>

Jun 15 22 29 06 13 20 27 03 10 17 24 31 07 14 21 28 05 12 19 26 02 09 16 23 30 07

**Wrench Selects Existing Faults**

	FINAL DRIVE	FINAL DRIVE	BARREL	U TURN	BB WIPER	BB LOWER	EVA	EVA	GARRAGE 12A
LP2 99879L	OK	OK	OK	OK	OK	OK	OK	OK	OK
OK	CPSELI	CPSPIS	F-CP	TPU	TRAXM	CSU	CP		
OK	OK	OK	OK	OK	OK	OK	OK		



PROTECTIVE MARKING JAW

**ADF ASSET MANAGEMENT**

User Name: M0005330  
User Role: Fleet Manager  
Local Time: 12:44 PM EDT 6/27/07

HOME • LOGOUT • MY ACCOUNT • HELP

---

Create OSC Fault

Serial No: BL5987EL      Description: Power Pack

NSN: 2815995072151

Recording Personnel Name: Echeverria, M      Recording Personnel ID: DANA      Fault ID:

Fault Group ID / Modification Number:      Job Card Number:

Reported By: Echeverria, M      Fault Reported Date: 15 Jun 07

Fault Category: Level 1      Fault Group: Other (specify)

Fault Condition: Awaiting Authority      Fault State: Non Taskworthy

Estimated Repair Date: 20 Jun 07      Required By Date:

Fault Description: Valve is leaking

Repair Agency: Not Selected      Repairing Personnel:

Certifier:      Completion Date:

Comments: Need to ship offline for repair.

Upon Save, Create another Fault      Save    Reset

Select the New Fault button and fill out the information in the fields. Click Save when finished.

PROTECTIVE MARKING JAW

ADF ASSET MANAGEMENT

User Name: M0005330  
User Role: Fleet Manager  
Local Time: 12:44 PM EDT 6/27/07

HOME • LOGOUT • MY ACCOUNT • HELP

---

OSC Faults

Serial No: BL5987EL      Description: Power Pack

NSN: 2815995072151

Fault Status: Open      Fault Category: All      Fault State: All      Fault Repair Agency: All

Job Card	Fault ID	Batch Fault ID	Description	Required Date	Est. Repair Date	Reported Date	Category	State
	119842		Minimum Configuration Incomplete			04 Aug 06	Level 1	Non Taskworthy
	131312		Valve is leaking		24 Jun 07	05 Jun 07	Level 1	Non Taskworthy
	126530	1111-8111-831	81109 - OSC Sam Test			12 Dec 06	Level 2	Limited Role
	127970		test			19 Feb 07	Level 2	Non Taskworthy

The new fault that was just created appears in the list.

PROTECTIVE MARKING IAW

ADF ASSET MANAGEMENT

User: JAMES1 (SCOTS DG)  
User Role: JAMES1 (SCOTS DG)  
Local Time: 10:55:42 AM AEST

HOME - LOGOUT - MY ACCOUNT - HELP

---

Equipment Faults

	ERM/Serial No: S21514	Description: TANK COMBAT CHALLENGER 2	Holding Unit: SCOTS DG
	Asset Code: HAD0043000		Gaining Unit:

Log in as a FM and navigate to the existing faults for the equipment in order to create a job card.

Jan 15 22 29 06 13 20 27 03 10 17 24 31 07 14 21 28 05 12 19 26 02 09 16 23 30 07

Fault Status:  Fault Category:  Fault State:  Fault Repair Agency:

Job Card ID	Fault ID	Batch No.	Description	Reqd. Date	Est. Repair Date	Reported Date	Category	Status	Repair/Officer/Completion Date
	130259		Mainframe Configuration Incomplete			03 Apr 07	Level 1	Non Taskworthy	
	131261		Minor Maintenance S21514 due 03 Jun 07 overdue			03 Jun 07	Level 1	Non Taskworthy	
	131312		Valve is leaking [Discovered on Power Pack - 2815995672191 - 8L59678L]		20 Jun 07	15 Jun 07	Level 1	Non Taskworthy	
	131308		Test [Discovered on Power Pack - 2815995672191 - 8L59678L]			10 Feb 07	Level 2	Non Taskworthy	
	131310		33400 - OSC Jam Test [Discovered on Power Pack - 2815995672191 - 8L59678L]			12 Oct 06	Level 2	Limited State	

PROTECTIVE MARKING IAW

PROTECTIVE MARKING IAW

ADF ASSET MANAGEMENT

User: JAMES1 (SCOTS DG)  
User Role: JAMES1 (SCOTS DG)  
Local Time: 10:55:42 AM AEST

HOME - LOGOUT - MY ACCOUNT - HELP

---

Create Job Card

	ERM/Serial No: S21514	Description: TANK COMBAT CHALLENGER 2	Holding Unit: SCOTS DG
	Asset Code: HAD0043000		Gaining Unit:

Jan 15 22 29 06 13 20 27 03 10 17 24 31 07 14 21 28 05 12 19 26 02 09 16 23 30 07

\* Nominated Repair Agency:  \* Required by Date:

Fault List:

Fault ID	Description	Category	Status	Reqd. Date	Officer	Completion Date
<input checked="" type="checkbox"/>	131312	Valve is leaking [Discovered on Power Pack - 2815995672191 - 8L59678L]	Level 1	Non Taskworthy		

Select Save when completed.

PROTECTIVE MARKING IAW

PROTECTIVE MARKING IAW

ADF ASSET MANAGEMENT

User: 0000 of 00000000  
User Role: System Manager  
Local Time: 15 Jun 07 13:41

HOME - LOGOUT - MY ACCOUNT - HELP

Equipment Configuration

ERMSerial No: 521514  
Asset Code: R493043000

Description: TANK COMBAT CHALLENGER 2

Holding Unit: SCOTS D-5  
Gaining Unit:

Calendar: Jun 15, 22, 29, Jul 06, 13, 20, 27, Aug 03, 10, 17, 24, 31, Sep 07, 14, 21, 28, Oct 05, 12, 19, 26, Nov 02, 09, 16, 23, 30, Dec 07

Return to the configuration screen to detach the OSC

PROTECTIVE MARKING IAW

PROTECTIVE MARKING IAW

ADF ASSET MANAGEMENT

User: 0000 of 00000000  
User Role: System Manager  
Local Time: 15 Jun 07 13:41

HOME - LOGOUT - MY ACCOUNT - HELP

Remove OSC from Parent Configuration

Serial No: 2163751  
NSN: 2815930072191

Description: Power Pack

Calendar: Jun 15, 22, 29, Jul 06, 13, 20, 27, Aug 03, 10, 17, 24, 31, Sep 07, 14, 21, 28, Oct 05, 12, 19, 26, Nov 02, 09, 16, 23, 30, Dec 07

Currently Fitted To: [Asset Icon]

Usage Information  
Description: Current Value

Storage Information  
In CHE:   
Storage Area:   
Storage Location:  (Format: Bdg - Row - Bay)

Date Removed: 15 Jun 07 10:15  
Replace immediately:

Comments: Need to ship offshore for repair.

Remove | Reset

Enter the reason for detachment and select Remove when finished.

PROTECTIVE MARKING IAW

PROTECTIVE MARKING IAW

**ADF ASSET MANAGEMENT**

User: DANA of SCOTS DG  
User Role: Fleet Manager  
Local Time: 15:59 (GMT+4 hrs)

HOME • LOGOUT • MY ACCOUNT • HELP

Equipment Configuration ★ Required Field

 LP2 9987BL	<b>ERM/Serial No:</b> BL9987BL <b>NSN:</b> 28 15995072 131	<b>Description:</b> Power Pack	<b>Holding Unit:</b> SCOTS DG <b>Gaining Unit:</b>
-------------------	---	-----------------------------------	--

PROTECTIVE MARKING IAW

PROTECTIVE MARKING IAW

**ADF ASSET MANAGEMENT**

User: DANA of SCOTS DG  
User Role: Fleet Manager  
Local Time: 15:59 (GMT+4 hrs)

HOME • LOGOUT • MY ACCOUNT • HELP

Equipment Configuration ★ Required Field

 LP2 9987BL	<b>ERM/Serial No:</b> BL9987BL <b>NSN:</b> 28 15995072 131	<b>Description:</b> Power Pack	<b>Holding Unit:</b> SCOTS DG <b>Gaining Unit:</b>
-------------------	---	-----------------------------------	--

**OSC Overview**

**OWNER:** [Blank] **Customer Organization:** [Blank] **UIN:** [Blank] **View Organizations:** [Blank]

**Destination:** [Blank] **Requested Delivery Date:** [Blank] **Location:** [Blank]

**Status:** [Blank] **Estimated Delivery Date:** [Blank] **Alerts:** [Blank]

**Repair Facility:** [Blank] **Status:** [Blank] **Comments:** [Blank]

**OSCS INFORMATION**

**Serial Number:** [Blank] **Date Date Service:** [Blank] **Primary Usage Counter Type:** [Blank]

**Contract Number:** [Blank] **Date of Manufacture:** [Blank] **Primary Usage Counter Units:** [Blank]

**Date Into Unit:** [Blank] **Date Entered Onto L&D:** [Blank]

**Colour:** [Blank] **Warranty:** [Blank]

**Readiness Code:** [Blank] **Warranty Exclusion:** [Blank]

**Comments:** [Blank]

**Maintenance Information**

**Overhaul and Classification Record:** [Blank] **Overhaul and Classification Usage Rating:** [Blank] **Date of Last Overhaul:** [Blank]

**OSCS Type Details**

**NSN:** [Blank] **AESP Number:** [Blank]

**OSCS Type Description:** [Blank] **IPT:** [Blank]

**Fuel Type:** [Blank] **CBS Number:** [Blank]

[Save Changes](#)

Log in as a DMC, move the OSC offsite, and enter the necessary tracking information. Save Changes when finished.

PROTECTIVE MARKING IAW

PROTECTIVE MARKING LAW

**ADF ASSET MANAGEMENT**

User: DANA of SCOTS DC  
User Role: Fleet Manager  
Local Time: 15:11 (GMT+4 hrs)

HOME • LOGOUT • MY ACCOUNT • HELP      ACTIVITY • ALLOCATION CHANGE REQUESTS • EQUIPMENT REQUESTS • REPORTS • STATUS

---

**OSC Search Results**

**Results Matching Filter:**

OSC Serial Number: \_\_\_\_\_ Custodian Organisation: \_\_\_\_\_  
 OSC Attachment State: All Holding Organisation: OFFSITE  
 OSC Status: All NSN: \_\_\_\_\_  
 Include All Subordinate Organisations:  
 Only VisCOM: NO

Serial Number	Type Description	Status	Holding Unit	Filed to ERM Serial Number
<input type="checkbox"/> E1313	Engine Mk 6F	Fully Fit	OFFSITE	
<input type="checkbox"/> BL9987BL	Power Pack	Not Taskworthy	OFFSITE	

**Batch Operations: (only done on equipment that your unit or subordinate unit holds or owns)**

PROTECTIVE MARKING LAW

Use the Advanced Search page (at any role) to find OSCs that are currently offsite.

PROTECTIVE MARKING LAW

**ADF ASSET MANAGEMENT**

User: DANA of SCOTS DC  
User Role: Fleet Manager  
Local Time: 15:11 (GMT+4 hrs)

HOME • LOGOUT • MY ACCOUNT • HELP      ACTIVITY • ALLOCATION CHANGE REQUESTS • EQUIPMENT REQUESTS • REPORTS • STATUS

---

**OSC Details**

**Serial Number:** BL9987BL      **Description:** Power Pack      **Holding Unit:** OFFSITE

**Owner:** \_\_\_\_\_      **Custodian Organisation:** OFFSITE      **UIN:** \_\_\_\_\_      **VisCOM Organisations:** \_\_\_\_\_  
**Current Organisation:** OFFSITE      **Holding Organisation:** OFFSITE      **UIN:** \_\_\_\_\_

**OSC Tracking Info:**

**Destination:** \_\_\_\_\_      **Requested Delivery Date:** \_\_\_\_\_      **Location:** \_\_\_\_\_  
**Status:** In Repair      **Estimated Delivery Date:** \_\_\_\_\_      **Alarm:** \_\_\_\_\_  
**Repair Facility:** R102 FRIDLY 1      **Status:** In Repair      **Comments:** backhaul on wing replacement valve

**OSC Information:**

**Serial Number:** BL9987BL      **Date into Service:** 01 Aug 06      **Primary Usage Counter Type:** \_\_\_\_\_  
**Contract Number:** \_\_\_\_\_      **Date of Manufacture:** 01 Aug 06      **Primary Usage Counter Units:** \_\_\_\_\_  
**Date into Unit:** 01 Aug 06  
**Date Entered onto L98:** 01 Aug 06

**Colour:** \_\_\_\_\_      **Material:** \_\_\_\_\_      **Warranty:** \_\_\_\_\_  
**Environment:** \_\_\_\_\_      **Warranty:** \_\_\_\_\_      **Partship:** \_\_\_\_\_  
**Readiness Code:** \_\_\_\_\_      **Type:** \_\_\_\_\_      **Detail:** \_\_\_\_\_

**Comments:** \_\_\_\_\_

**Maintenance Information:**

**Overhaul and Classification Record:** \_\_\_\_\_      **Overhaul and Classification Usage Reading:** \_\_\_\_\_      **Date of Last Overhaul:** 06 Aug 06

**OSC Type Details:**

**NSN:** 281550072011      **ADSP Number:** \_\_\_\_\_  
**OSC Type Description:** Power Pack      **IPT:** \_\_\_\_\_  
**Fuel Type:** \_\_\_\_\_      **CES Number:** \_\_\_\_\_

[Save Changes](#)

PROTECTIVE MARKING LAW

View tracking data and update specific details as a DMC only.

PROTECTIVE MARKING LAW

ADF ASSET MANAGEMENT

HOME • LOGOUT • MY ACCOUNT • HELP

Equipment Information

ERM/Serial No: BL2597SL	Description: Power Pack	Holding Unit: OFFSITE
MSN: 3318593071191		Gaining Unit:

Custodian Organisation: OFFSITE

Holding Organisation Phone Number:

ERM Serial No.	Date Final	Date Replaced
EV005	04 Aug 08 21:09	18 Jun 07 05:35

OSC Tracking Info

Shipment ID: 49-02R-5719

Requested Delivery Date: 20 Jun 07

Location: 55Bbourne

Status: Received at Repair Depot

Estimated Delivery Date: 21 Aug 07

Alerts: N/A

ITV

Repair Facility: MRO Facility 1

Status: In Repair

Comments: Mechanic awaiting replacement valve

PROTECTIVE MARKING LAW

View read only details as users other than DMC.

PROTECTIVE MARKING LAW

ADF ASSET MANAGEMENT

HOME • LOGOUT • MY ACCOUNT • HELP

Equipment Details

ERM/Serial No: BL2597SL	Description: Power Pack	Holding Unit: OFFSITE
MSN: 3318593071191		Gaining Unit: SIC025 DND B 5004

OSC Organisation

Owner: OFFSITE

Custodian Organisation: OFFSITE

UIN: 46410A

VisCOM Organisations:

Owning Contractor: DMC 1190

Holding Organisation: DMC 1190

UIN: DMC 1190

Information

Number: 791

Date Into Service: 07 Aug 07

Primary Usage Counter Type: No unit

Serial Number: 55000

Date of Manufacture: 05 Aug 07

Primary Usage Counter Units:

Date Into Unit: 05 Aug 07

Date Entered Onto LBS: 04 Aug 07

Warranty: Warranty of Reliability

Type: Warranty

Detail:

Overhaul and Classification

Overhaul and Classification Usage Reading: 111111

Date of Last Overhaul: 04 Aug 07

OSC Type Details

NSN: 53100007201

AESP Number:

OSC Type Description: Power Pack

IPT:

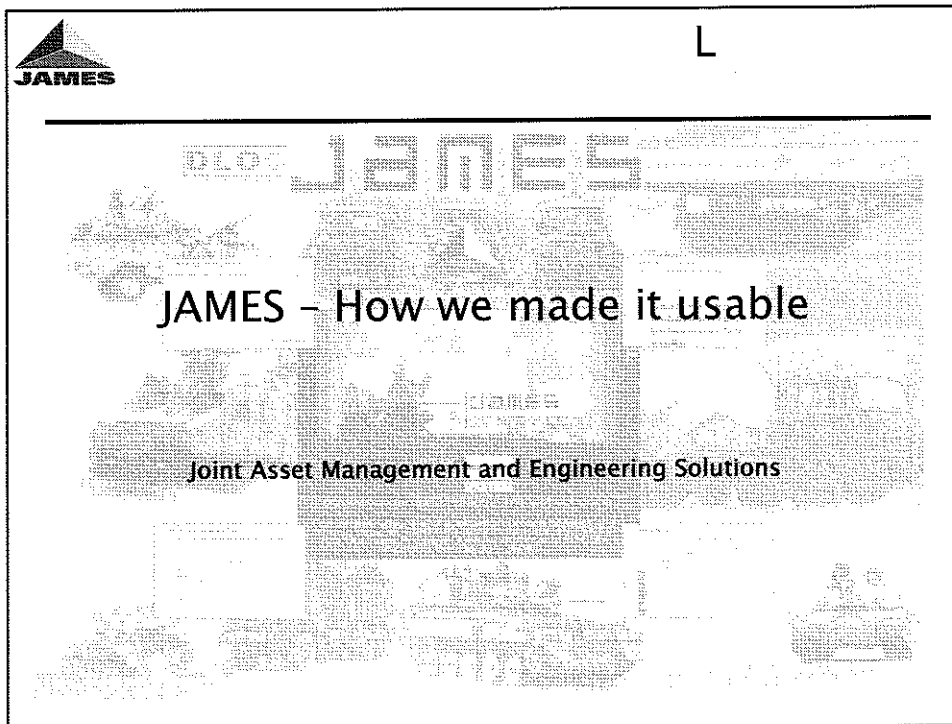
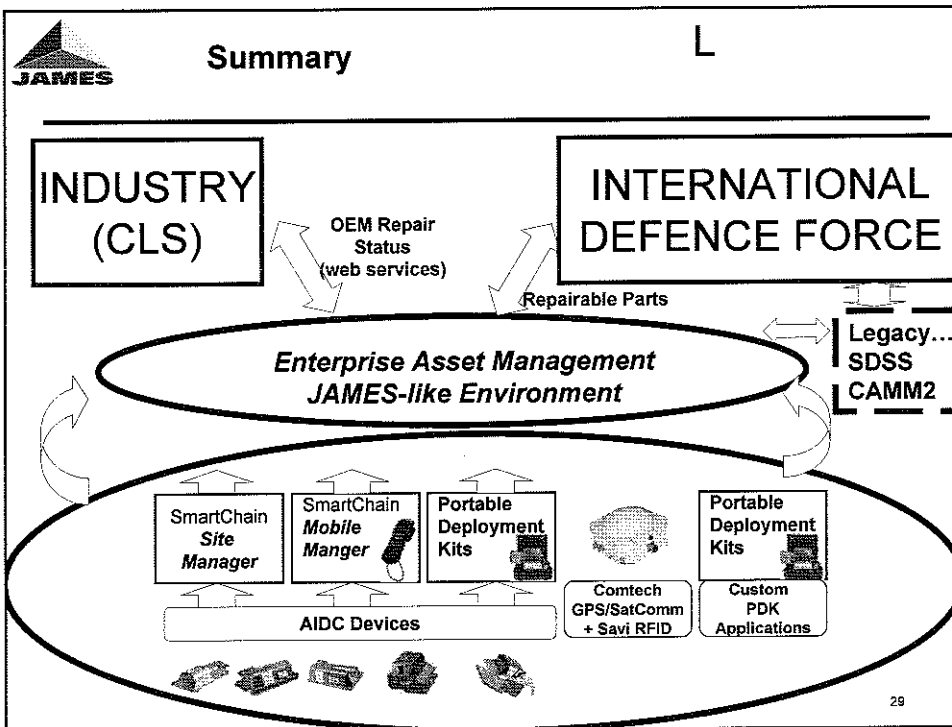
Fuel Type:

CES Number:

ERM Serial No.	Date Final	Date Replaced
EV005	04 Aug 08 21:09	18 Jun 07 05:35

PROTECTIVE MARKING LAW

Once the OSC is returned to its original location, the DMC (TFR) unit is responsible for the OSC until the Equipment Manager of the original unit receives back.





## Follow Guidelines

L

- Minimize clicks
- Minimize screens
- Follow good web design practices
  - Drop downs, buttons, pick lists, fonts
- Consistent and sparing use of color
- Use of Mouse over for more information
- If not obvious provide instruction on the screen
- Provide for Validation of inputs
- Provide return paths

Simple...Amazon.com was the goal

31



## Keep It Familiar

L

- User Icons and names for Organizations, equipment, other objects
- Must use the User's not engineer terms
- Screen flow follows the user processes not the COTS
- Display as it is used (breaks, hyphens, etc)
- Similar functions should look the same within and across levels in the organization



Familiarity Breeds Fewer Errors and Less Training

32

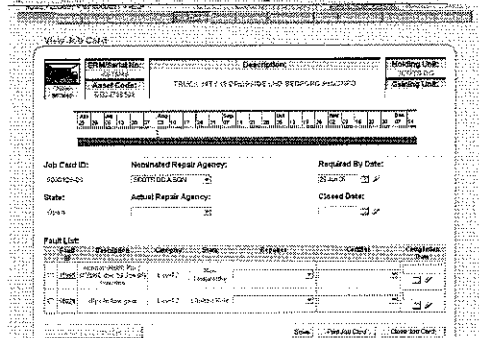




L

## Ensure Subject Matter Expert (SME) Involvement

- Need someone who understands the user
  - Terminology
  - Intent
  - Processes
  - Constraints
  - What is meant and needed
- This ensures you get it right, not almost right as you ask the right questions
- You understand not just follow directions
- Hear the nuances
- Shortens development time - reduces rework and retest



Understanding the User Reduces Risk, Schedule and Cost

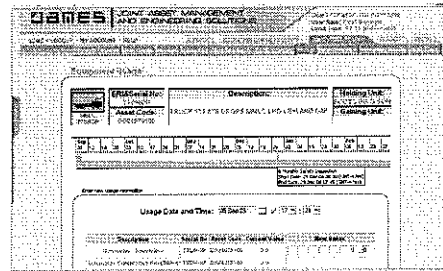
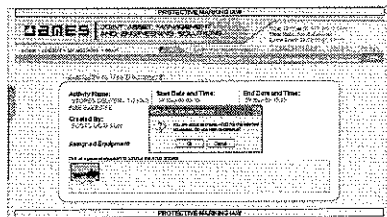
33



L

## Minimize Error Possibilities

- Validation of input
- Confirmation messages
- Warnings
- Use of Drop downs, pick lists, buttons
- Break up input to avoid errors
- If numeric - does it make sense
- Design for input errors
  - allow recovery



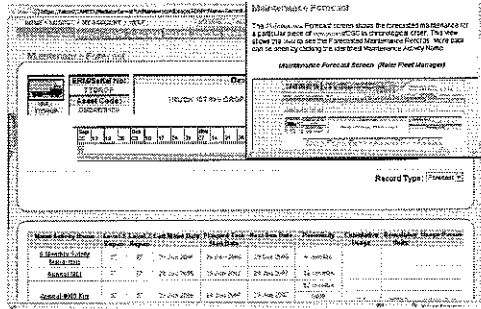
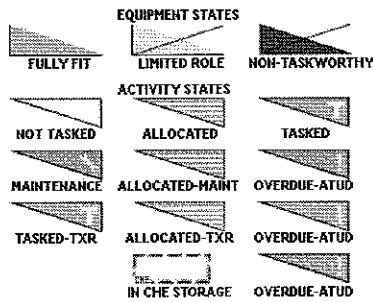
Fewer Errors Equates to Increased User Satisfaction

34



## Provide for Help and Training

- Provide for help inside and outside of the application
- Have the User or SME conduct the training and write the help for greater acceptance of it
- Roll out method to units, not big bang
- Plan several visits to units for preparation and repetition



**Users Hear Better  
In Their Own Voice**

35



## JAMES - How we delivered rapidly

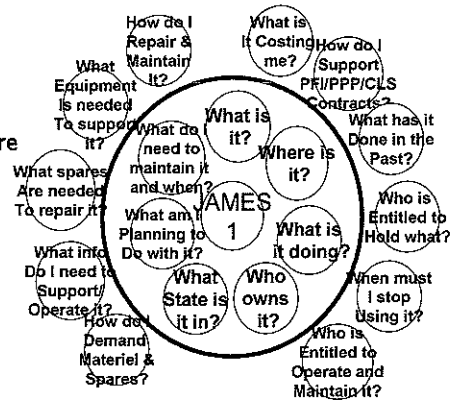
Joint Asset Management and Engineering Solutions



L

## Identify What Is Achievable As An Increment

- Identify the minimum usable capability and when it is required; then accept it
- Minimum means it provides value, can be delivered, and can be built upon
- Work in spirals, sprints, iterations, but against a system design and architecture
- Avoid rework due to future increments you know about
- If not time constrained - create forcing functions
- Size effects are not linear
  - Schedule
  - Performance
  - Complexity
  - Errors
  - Testing



Start Small - Then Add to It Once It Is In Use

37



L

## Understand the User's Business Processes

- The User should identify a single point for business process decisions and to be the change advocate
- Make sure the requirements, business processes, use cases, con-ops, scenarios are understood by all stakeholders
- Basic system engineering must be done
- Review with the user - early and often - to validate your understanding and implementation
  - Have agreed rules for how to handle 'observations'
- Need someone who understands the user involved throughout the process to ask the right questions and understand the answers

Item	Req	Design	Code	Test	Oper	Maint	Support
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							

Understanding Clarifies What Is Written Down

38



## Understand the COTS Schema

L

- Must know what the COTS schema provides and compare that to the user business processes, requirements, scenarios – they will not always match
- Make informed and consistent decisions on whether to add non COTS supported functions by vendor customization or externalizing
  - Life cycle costs, will it stay a customization or part of the product, future implications, past performance
- Basic system engineering required
- Review with the user – early and often – to validate constraints / work arounds from the COTS
- Consider performance implications
- Need someone who understands the COTS product
  - May need to employ a representative from the COTS product

The Risk Is In The Details

39



## Plan, Act, Follow up, Measure, and Commit

L

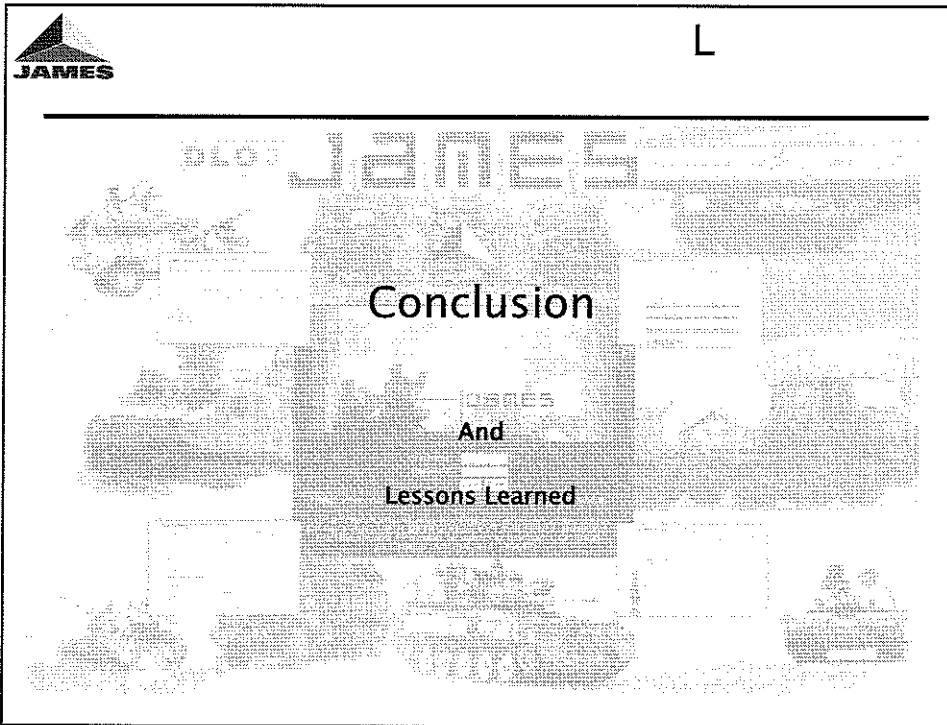
- Have a set of system requirements, a system design, and a system architecture first
- Have a realistic linked schedule – with sufficient detail
  - 2 week tasks when possible
  - Estimates updated for past performance
  - Work to the schedule and modify as needed
  - Include all customer / external deliveries, meetings, demo's
  - Put in 'forcing functions' that stretch the team
  - Identify and work risks – build them into the bid and schedule
- Have weekly status meeting to track progress – ask hard questions
- Ensure you provide for demo's and test
- Correct for lessons learned
- Commit – If you say it, do it – TRUST is a must with all Stakeholders

Do The Basics

40



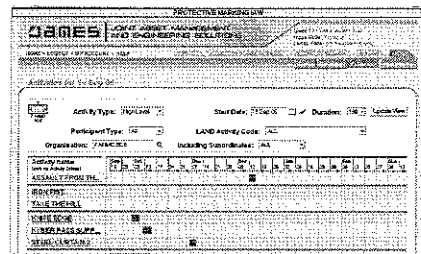
L



## Summary

L

- Identify reasonable sized increments
- Have a system level architecture, design, and requirements before you start.
- Have rules for customization of the COTS
- Work with the user to understand their business processes
  - The devil is in the details
- Implement in the User's 'language', so the screens mirror the User's processes
- Control Change
- Commit and build trust
- Demo and Test - catch defects early



A Usable Capability That Meets Initial Needs Rapidly

42