

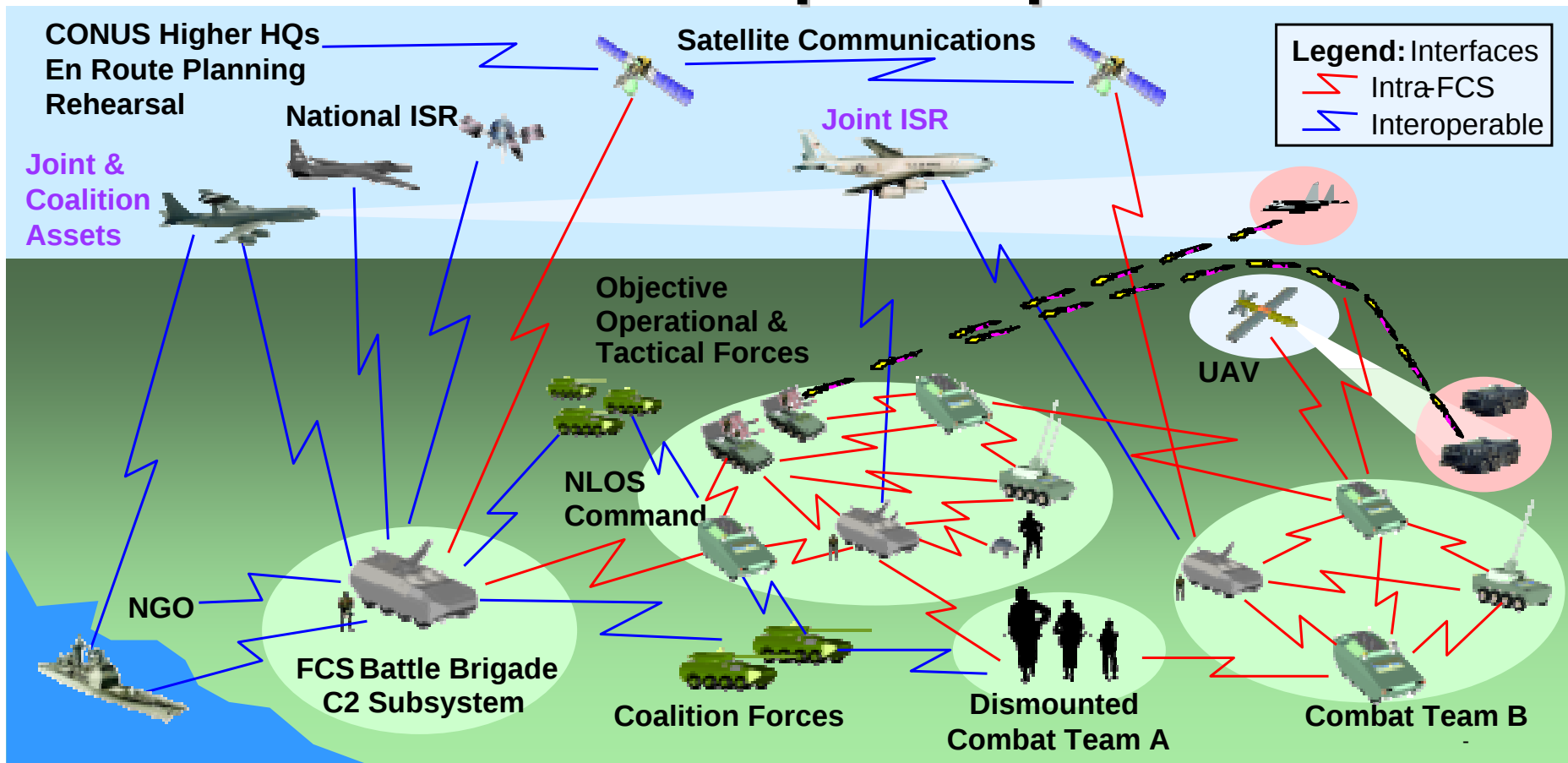
# THE MIMOSA OPEN SOLUTION COLLABORATIVE ENGINEERING AND IT ENVIRONMENTS WORKSHOP

By  
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2-3 March 2005



| Report Documentation Page                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                    |                                     |                                            | Form Approved<br>OMB No. 0704-0188          |                                    |
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# The LSI's Concept of Operations



Field FCS-Equipped Units of Action With Threshold Objective Force Capability by the End of the Decade.

Fuelers Combat Systems  
**FCS**  
 One Team - The Army / DARPA / Industry

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**BOEING** **SAIC**

**MIMOSA**™

**SED**  
 Software Engineering Directorate

**SAIC**

# REQUIREMENTS

- **COMMON OPERATIONAL PICTURE OF THE BATTLEFIELD**
- **COMMON OPERATIONAL PICTURE OF THE LOGISTICS ENVIRONMENT**
- **ENABLERS**
  - Move All Types of Data
  - Achieve Interoperability
  - Utilize COTS Open Systems



# OPEN SYSTEMS

- **DEFINITION**

- Platform, Vendor, and Application neutral and readily available with large following

- **DoD MANDATES**

- DoD Instruction 5000.2, Operation of the Defense Acquisition System, 12 May 2002
  - DoD Directive 4630.5, Interoperability and Supportability of Information Technology and National Security Systems, 5 May 2004



# MIMOSA DoD ADOPTION

MIMOSA-OSA-EAI-2004

## ADOPTION NOTICE

MIMOSA OSA-EAI-2004, MIMOSA Open Systems Architecture for Enterprise Application Integration (OSA-EAI) Standards, was adopted on 20 December 2004 for use by the Department of Defense (DoD). Proposed changes by DoD activities must be submitted to the DoD Adopting Activity: Department of the Army, Aviation and Missile Research, Development, and Engineering Center, Research, Development, and Engineering Command, Attn: AMSRD-AMR-SE-TD-ST-DM/ST, 5400 Fowler Road, Redstone Arsenal, AL 35898-5000. The private sector and other government agencies may obtain copies from <http://www.mimosa.org>.

### Custodians:

Army – MI

Navy - AS

Marine – MC

### Review Activities:

Army – TM

Navy – CG, CH, EC, SA, TD

AMSC N/A

### Adopting Activity:

Army – AV

(Project IPSC-0085)

AREA: IPSC

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.





# THE LIFE CYCLE SOLUTION



# LIFE CYCLE CONCERNS

- **CHANGING FLEET OVER LIFE CYCLE**
  - Software versions
  - Hardware upgrades
  - Vendor changes
  - Sustainer changes
- **LACK OF INTEROPERABILITY**



# MIMOSA

- **DEFINITION: NOT-FOR-PROFIT TRADE ASSOCIATION DEDICATED TO DEVELOPING AND ENCOURAGING ADOPTION OF OPEN INFORMATION STANDARDS FOR OPERATIONS AND MAINTENANCE (OpenO&M™)**



# MIMOSA

- **PROVIDE OPEN ARCHITECTURE FOR OpenO&M™ APPLICATION INTEGRATION**
- **COMBINES**
  - XML
  - OPC Foundation XML-DA Standards
  - MIMOSA Open Systems Architecture
    - Enterprise Application Integration
    - Condition Based Maintenance
    - Condition Based Operations



# MIMOSA STANDARDS

- **TWO INTEROPERABLE BRANCHES**
  - **Open Systems Architecture for Conditioned Based Maintenance (OSA-CBM™)**
    - Object interfaces (modules with exposed methods)
    - Platform oriented (helicopter, vehicle, ship)

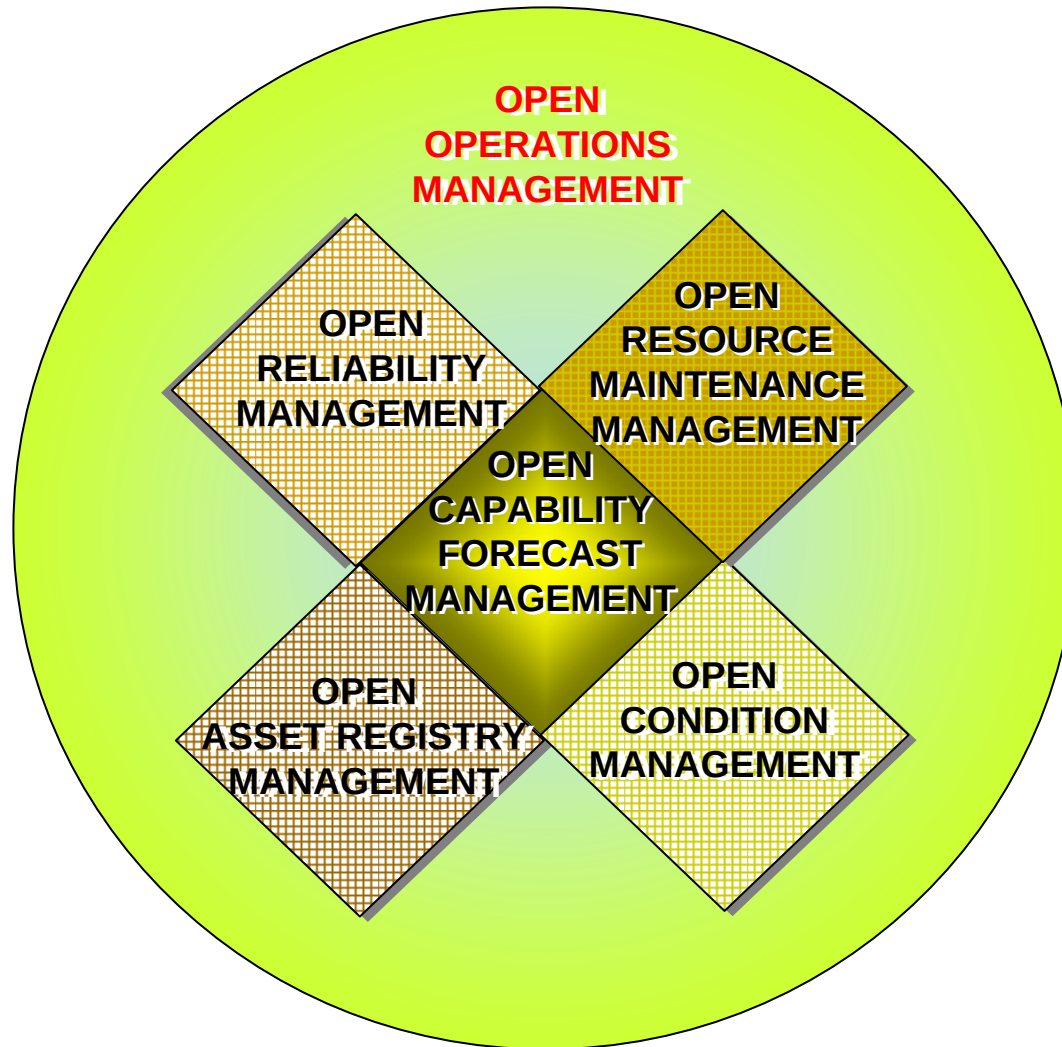


# MIMOSA STANDARDS

- **TWO INTEROPERABLE BRANCHES cont'd**
  - **Open Systems Architecture for Enterprise Application Integration (OSA-EAI™)**
    - Pure W3C XML schemas
    - Includes modeling, metadata, source, query/response, historicity, etc.
    - Applicability
      - Diagnostics, prognostics, trending, test, and maintenance
      - Acquisition of built-in-test results, storage of raw and transformed data, and exchange of data for analysis and viewing
      - Interoperability



# MIMOSA OpenO&M™ DOMAINS



# MIMOSA PRODUCTS

- **PRODUCES VENDOR-NEUTRAL OPEN INFORMATION EXCHANGE STANDARDS**
  - Finalized standards are publicly available at [www.mimosa.org](http://www.mimosa.org)
  - Committee work-in-progress is voted on and included in standard schema collection at yearly group meeting
  - Quarterly technical meetings
  - Joint interoperability meetings



# MIMOSA GOAL & IMPLEMENTATION

- **IMPLEMENTATION**
  - **Understand**
    - Measurement and activity data
    - Data source and location
    - Data source relationships to each other on platform and across system/enterprise
    - History of data and sources
  - **Enable**
    - Update and tracking of information as technologies, components, vendors, and maintainers change



# MIMOSA GOAL & IMPLEMENTATION

- **IMPLEMENTATION CONT'D**

- **Provide**

- **Structure for storage of data and its descriptive metadata**
    - **Query/response mechanisms for exchange of data**
    - **Notification techniques for alarms and events**
    - **Maintenance work related information**

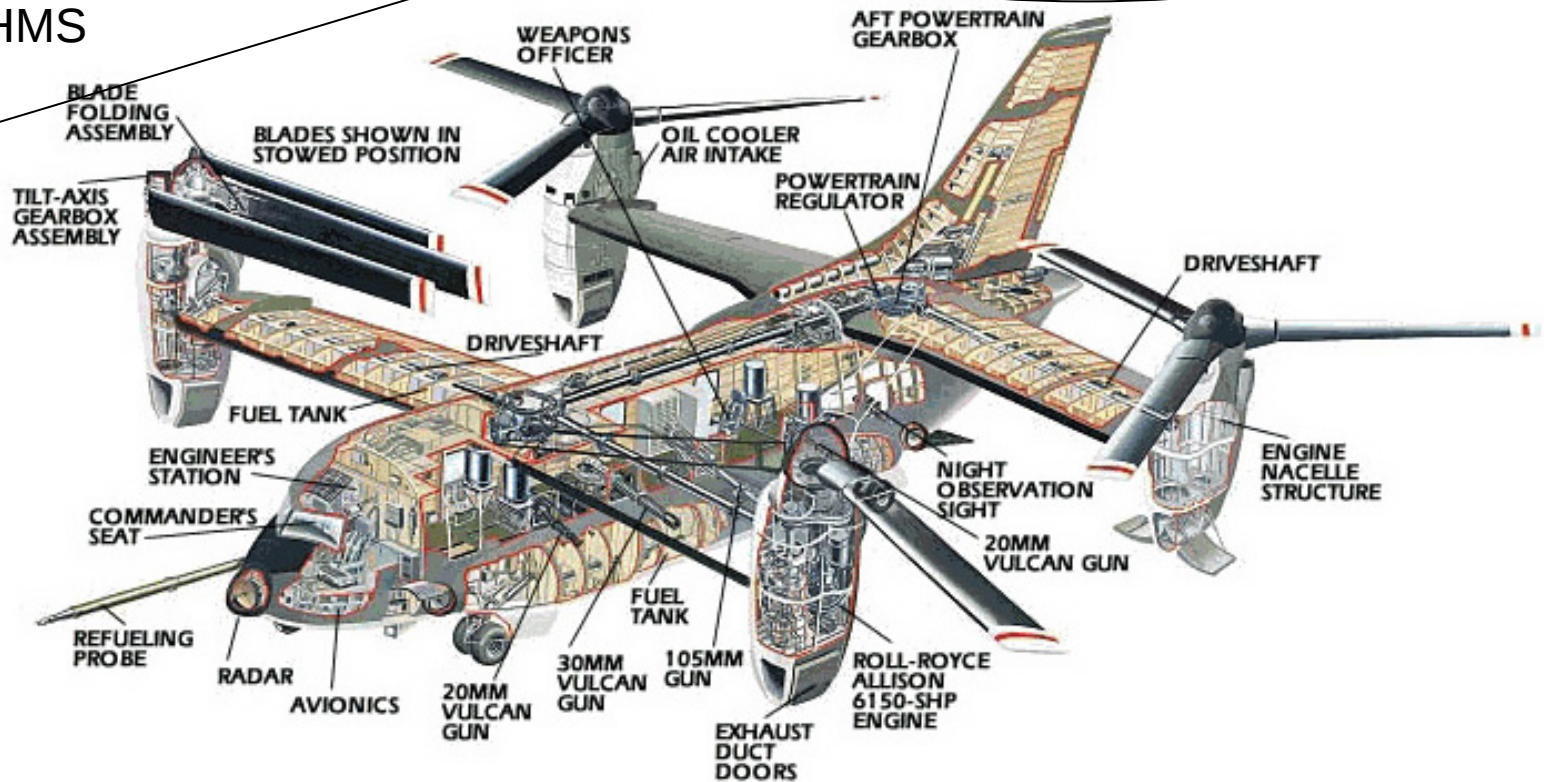


# MIMOSA KEY CONCEPTS

- METADATA
- ABSTRACTIONS
- TYPING
- MODELING
- GLOBALLY UNIQUE IDENTIFIERS
- HISTORY



ENTERPRISE  
SITE  
ASSET  
SEGMENT  
MEASUREMENT LOCATIONS  
ALGORITHMS  
AGENTS



# MIMOSA STANDARDS

- STANDARDS BUILT UPON A COMMON CONCEPTUAL OBJECT MODEL
- COMMON RELATIONAL INFORMATION MODEL
- TECH-XML
- TECH-WEB
- TECH-DOC
- TERSE MESSAGE SCHEMA



# MIMOSA

- **MIMOSA CENTER OF EXCELLENCE**

- **Location**

- **Software Engineering Directorate  
Research, Development, and Engineering  
Center  
Research, Development, and Engineering  
Command**

- **Purpose**

- **Execute the MIMOSA implementation process  
within the Department of Defense**



**MIMOSA  
ENTERPRISE 0**

**GLOBAL  
METADATA**



**ARMY SPECIFIC  
METADATA**

**ARMY  
ENTERPRISE 0**

**C4ISR/  
RETAIL  
(GCSS-A/T)  
WHOLESALE  
(DEPOT)**

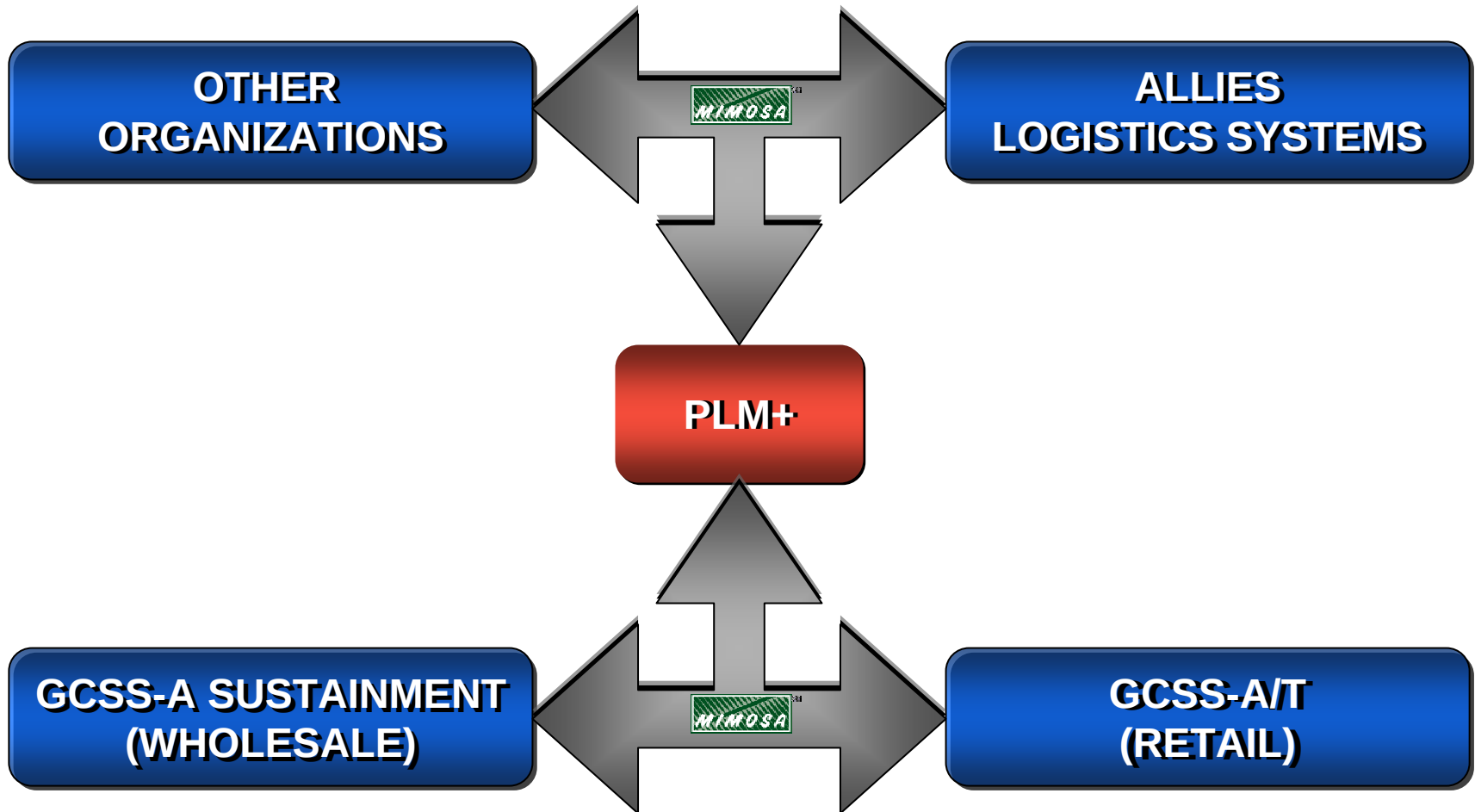
**SED DATA  
WAREHOUSE  
CRIS FORMAT**

**AMRDEC SOFTWARE ENGINEERING DIRECTORATE  
MIMOSA CENTER OF EXCELLENCE  
IMPLEMENTATION FUNCTIONS**

1. ASSET/ SEGMENT ID CONTROL/BLOCK RELEASE
2. ARMY SPECIFIC GLOBAL DATA TYPE ASSIGNMENT
3. ARMY WIDE SITE ID ASSIGNMENT
4. ANALYSIS, TRENDS, RULES
5. RULES/POLICY DEVELOPMENT
6. DATA COLLECTION REQM'TS IDENTIFIED
7. GENERATE RAW DB CONTENTS FOR ALL SITES
8. DEVELOP/MAINTAIN WEB SITE
9. MAINTAIN DATA CURRENCY
10. ANSWER REQUESTS FOR ARMY TYPES/SITE, MODEL HISTORIES
11. TRACK PLATFORM CONFIGURATION CHANGES
12. MAINTAIN TERSE MESSAGE SCHEMA TYPES
13. INTERFACE/INTEGRATION TEST/CERTIFICATION



# ARMY LOGISTICS



# SUMMARY

- OPEN
- FORMAT ONCE
- MODEL
- DESCRIBE
- TRANSFER
- STORE
- QUERY/RESPONSE





# THE LIFE CYCLE SOLUTION

