JEDMICS TO SMART JEDMICS EVOLUTION

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Deputy IPT Lead
OCTOBER 1996

GENESIS OF POM 98 SMART JEDMICS ISSUE

- FEB 96 DATA CALL FOR MIGRATION SYSTEMS ISSUES PAPER WITH CAVEAT FOR APPROVED FEA
- SUBMITTED TO N8 & NCCA
- COPIES TO NUMEROUS ACTIVITIES
- VISION STATEMENT:
  - As a follow-on program to JEDMICS that will add value to acquisition reform, business process reengineering, and other DoD initiatives to improve support to the Warfighter, DoD will acquire a virtual digital repository for corporate logistics technical information. The follow-on program, the Strategic Military Advantage to Repository Technology (SMART) JEDMICS will deliver that value by capturing, normalizing and providing global access to corporate logistics technical information.

THE CHALLENGE

- OBTAINING CORPORATE VALUE FROM TECHNICAL DOCUMENT INVESTMENTS
- COLLECTING, NORMALIZING AND STORING CORPORATE TECHNICAL DOCUMENTS THAT CAN BE USED GLOBALLY
  - For Different Purposes
  - In Different Business Processes
  - In Different Software Applications
  - In Different Computer Systems
- TO MINIMIZE NEW DEVELOPMENT
- TO MAXIMIZE USE OF EXISTING AND EMERGING TECHNOLOGIES

BACKGROUND

- INDUSTRY IS EXPERIENCING LARGE PRODUCTIVITY GAINS BY APPLYING AN OVERARCHING CLIENT SERVER ARCHITECTURE FOR INFORMATION MANAGEMENT THEREBY CAPTURING DOCUMENTS AS CORPORATE ASSETS
- ACHIEVING PRODUCTIVITY GAINS WITHIN CALS CAN BE FACILITATED BY ADOPTING AN OVERARCHING INFORMATION MANAGEMENT ARCHITECTURE WHICH MANAGES CORPORATE DOCUMENTS GENERATED BY CALS CLIENT SERVER APPLICATIONS
- JEDMICS IS DOD'S EXISTING COTS BASED GOV'T TECHNICAL DOCUMENT REPOSITORY WHICH CAN BE ECONOMICALLY UPGRADED TO MANAGE ALL GOV'T TECHNICAL DATA AS A CORPORATE ASSET (FEA SHOWS A 3.2 SIR FOR ENGINEERING DRAWINGS ALONE)
- UPGRADING JEDMICS TO BECOME DOD's CORPORATE TECHNICAL DOCUMENT REPOSITORY COMPLIES WITH 5000.1 MATERIAL SOLUTION ORDER OF PREFERENCE
  - Use/Modify Existing US Military System
  - Use/Modify COTS that Fosters NDI

WHERE INDUSTRY IS HEADING

- **LEVERAGING CLIENT SERVER INFRASTRUCTURE INVESTMENTS TO BETTER CAPTURE AND MANAGE CORPORATE KNOWLEDGE**
- **USING ENGINEERING DATA MANAGEMENT SYSTEMS, COUPLED WITH EXPERT SYSTEMS TO CREATE A KNOWLEDGE BASE FOR:**
  - **Development**
    - **Rapid Design Prototyping**
    - **Model Based Development**
    - **Component Based Development**
  - **Intelligent Help Desks**
  - **Equipment Troubleshooting and Repair**
- **USING WORLD WIDE WEB TECHNOLOGY WITHIN CORPORATE LANS TO CREATE *INTRANETS* FOR NAVIGATING THROUGH MOUNTAINS OF DATA ACROSS DISCIPLINES**

CURRENT ENVIRONMENT

- JEDMICS IS THE ONLY "BASELINED APPROVED MILESTONE III" DUSD(L) DEPLOYED SYSTEM
- DUSD(L) COMMUNITY HAS RECOGNIZED THE DIFFERENCE BETWEEN APPLICATIONS AND INFRASTRUCTURE AND ACKNOWLEDGED SAVINGS ARE IMPOSSIBLE WITHOUT DEFINING AND ESTABLISHING AN INTEGRATED INFRASTRUCTURE
- JEDMICS IS POSITIONED TO PROVIDE MASSIVE CORPORATE DOCUMENT STORAGE TO SUPPORT THE EMERGENT DOD INFRASTRUCTURE
- JEDMICS PMO PARTICIPATING ON A STUDY GROUP TO RESOLVE INFRASTRUCTURE ISSUES LIKE SECURITY, GLOBAL ACCESS, COOP, COMMON USE OF PERIPHERALS AND REPOSITORY CONSOLIDATION

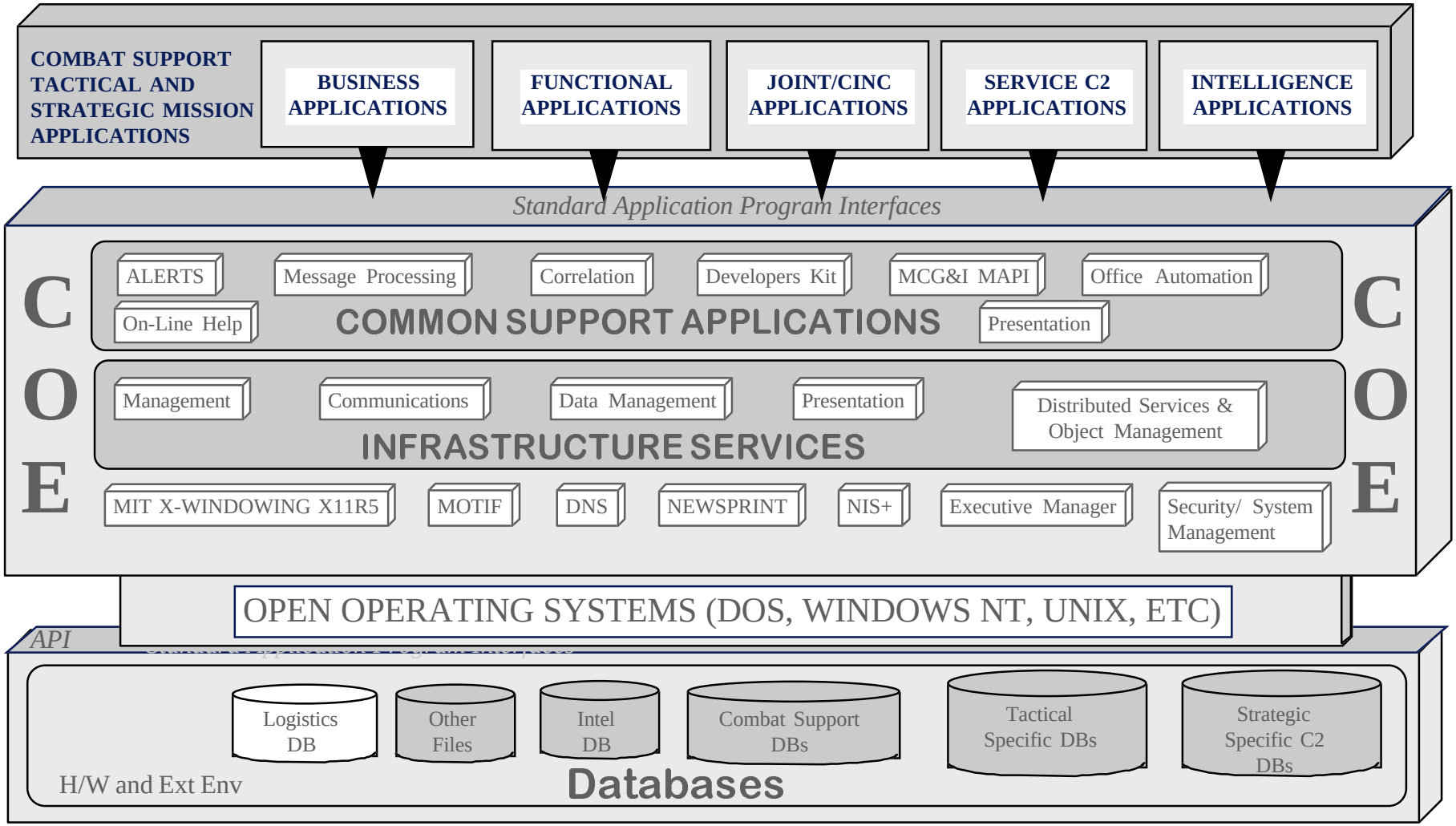
INTEGRATED DATA REPOSITORY VISION FOR THE FOLLOW-ON CONTRACT

- ***EXPAND AND EVOLVE THE JEDMICS REPOSITORY SYSTEM TO BECOME DOD'S INTEGRATED TECHNICAL DOCUMENT REPOSITORY***
  - ***JEDMICS' INTEGRATED VISION IS ALIGNED TO SATISFY (GPRA) GOVERNMENT PERFORMANCE RESULTS ACT OF 1993 WHICH MANDATES:***
    - ***An IT Vision,***
    - ***Strategic Plan and***
    - ***Measurable Performance Parameters***

SMART JEDMICS IMPACT TO MISSION NEEDS STATEMENT

- CURRENT MNS DEFINES THE NEED TO CAPTURE ENGINEERING DRAWINGS AND ASSOCIATED TECHNICAL DATA
- TECHNICAL DATA DEFINED BY DOD-5000 INCLUDES:
  - TECHNICAL MANUALS
  - ENGINEERING DRAWINGS
  - LOGISTICS SUPPORT ANALYSIS RECORDS
  - PACKAGING, HANDLING, STORAGE, AND TRANSPORTATION DOCUMENTATION,
  - ETC.

GCCS AND GCSS INFORMATION INFRASTRUCTURE



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BENEFITS

- PARALLELS DOD INFRASTRUCTURE WITH THE COMMERCIAL WORLD
  - REDUCES THE NEED FOR NEW DEVELOPMENT
  - FOSTERS QUICK RESPONSE TO CHANGING MISSION REQUIREMENTS
  - FACILITATES INCREASED USE OF DUAL USE COMMERCIAL OFF THE SHELF (COTS) SOLUTIONS
  - ALLOWS FOR THE PLUG N PLAY APPLETS WITH MINIMAL GAP INTEGRATION
- SEAMLESS INTEGRATION WITH GCSS, GCCS
  - PERMITS SEAMLESS INFUSION OF TECHNOLOGY THRU STANDARD API'S

BENEFITS

- PROVIDES THE WEAPON SYSTEM PROGRAM MANAGER OPTIONS CONCERNING DATA MANAGEMENT DECISIONS
  - PROMOTES BALANCED PRICING FROM CITIS PROVIDERS
- ENABLES TRUE SEPARATION OF DATA FROM PROCESS
- PROVIDES TOTAL COOP FOR DOD CORPORATE TECHNICAL DOCUMENT INVESTMENTS
  - OPTICAL THE SAFEST STORAGE MEDIUM AVAILABLE

SMART JEDMICS IPT STRUCTURE

OVERARCHING IPT

DUSD(L), ASD (C3I), PA&E

INTEGRATING IPT

Chair: IPT Leader
Mr. Robert E. Houts
Deputy: Deputy IPT Leader
Ms. Shirley Brauning

COST/PERFORMANCE WIPT

Chair: Naval Center For Cost Analysis
Harold Dagel

ACQUISITION STRATEGY WIPT

Chair: Naval Inventory Control Point
Janet Stueteville

DEMONSTRATION WIPT

Chair: MICOM EDMS
Paul Behrens

IPT GOALS

- DEVELOP ACQUISITION STRATEGY WHICH CAN FACILITATE A DUSD(L) CORPORATE DOCUMENT REPOSITORY WITH THE SMALLEST POSSIBLE INVESTMENT
- DEVELOP INTERFACE STRATEGIES FOR SHARING DOCUMENTS WITH INTEGRATING MIGRATION/LEGACY SYSTEMS
- DEMONSTRATE FEASIBILITY OF ACHIEVING OVERARCHING CLIENT SERVER ARCHITECTURE FOR LBS
- IDENTIFY COST PERFORMANCE MEASURES
- PARTICIPATE ON STUDY TEAM TO RESOLVE TECHNICAL ISSUES

JEDMICS OVERVIEW

Shirley Brauning

JEDMICS Business And Financial Manager

OCTOBER 1996

WHAT IS JEDMICS

A JOINT PROGRAM TO ESTABLISH A STANDARD SYSTEM FOR THE MANAGEMENT AND CONTROL OF DIGITAL ENGINEERING DATA.

REPLACES:

- Digital Storage and Retrieval Engineering Data System (DSREDS) - Army
- Engineering Data Computer Assisted Retrieval System (EDCARS) - Air Force
- Manual Aperture Card Repositories - Navy

UPGRADES:

- Engineering Data Management Information and Control System (EDMICS) - Navy, DLA

JEDMICS PROGRAM DIRECTION

Background

- **14 NOV 1991 C^3I MEMOS**

  "STANDARD DoD PROGRAM FOR MANAGEMENT OF ENGINEERING DRAWINGS & RELATED TECHNICAL DATA."

  - **Tasked to Develop & Implement Standard DoD Engineering Drawing Management System**
  - **Develop Program Implementation Plan**

Background

SIGNIFICANT EVENTS

APR 93 JEDMICS PROGRAM CHARTER AND STRATEGIC IMPLEMENTATION PLAN APPROVED

JUN 93 MAISRC IPR RECONFIRMED PROGRAM DIRECTION (No Issues Noted - Formal Review Cancelled)

SEP 94 DUSD(L) IPR DIRECTED ACCELERATION OF SOFTWARE RELEASE 2.5 TO ENABLE SHUTDOWN OF ARMY AND AIR FORCE LEGACY SYSTEMS

JUL 95 DUSD(L) IPR DIRECTED BY ASD/C3I ALIGNED LEGACY SYSTEM SHUT DOWN WITH COMPLETION OF DATA MIGRATION

SOURCE:J:\GRAPHS\STDPITCH\HISTORY

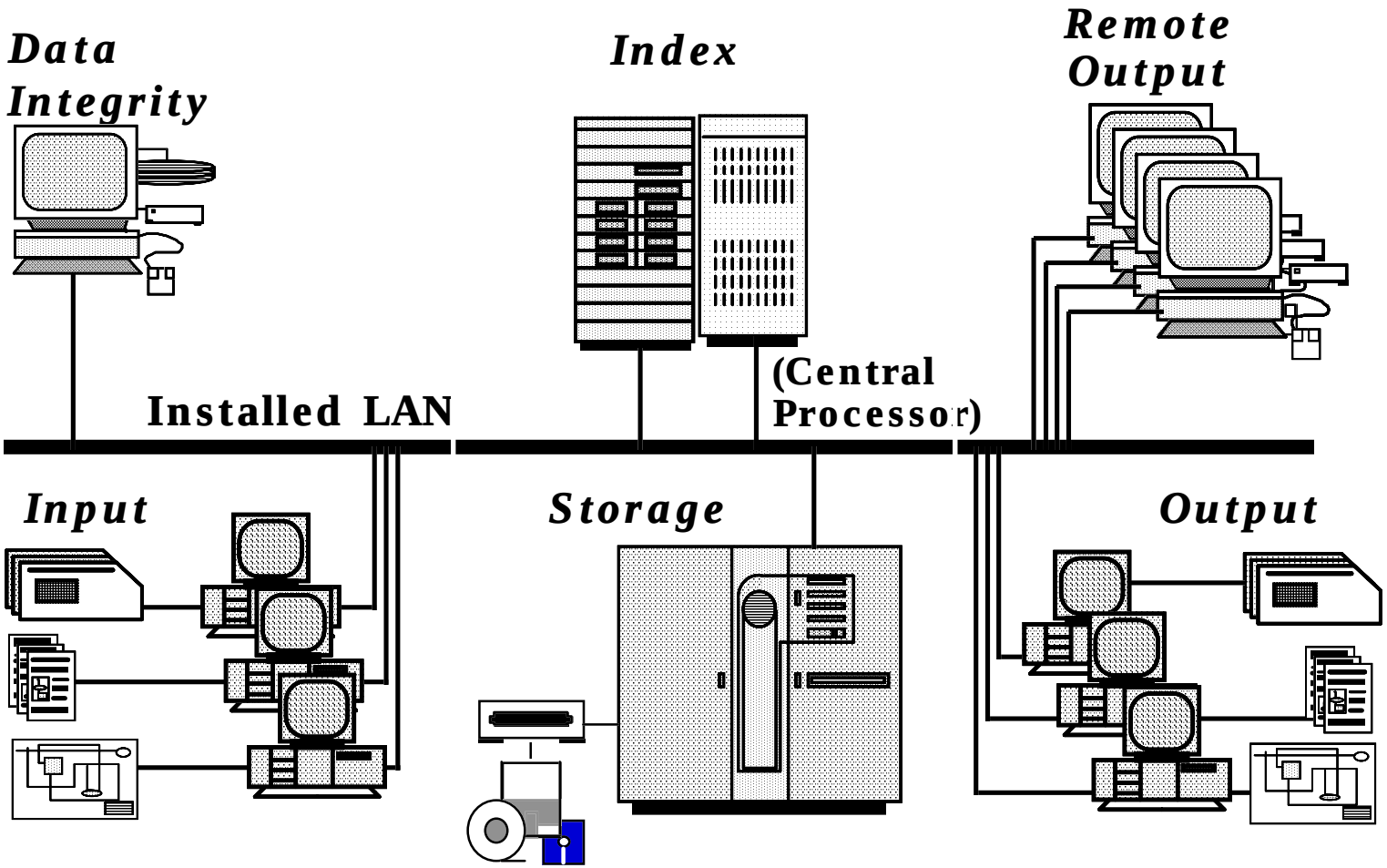
JEDMICS FUNCTIONALITY

JEDMICS Provides the Following Functionality for Engineering Data (Drawings and Text):

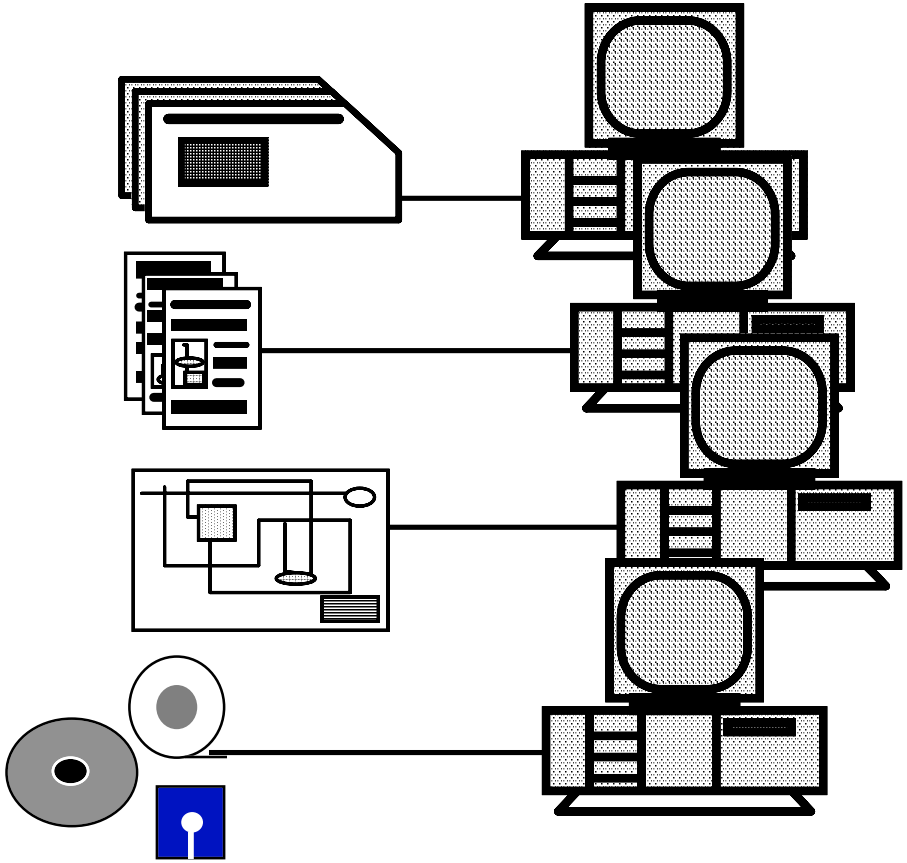
- Receipt
- Storage
- **Management**
- **Control**
- Retrieval

Supports a wide range of functions i.e. procurement, operations, modernization, repair and logistics requirements

JEDMICS
Architecture Overview



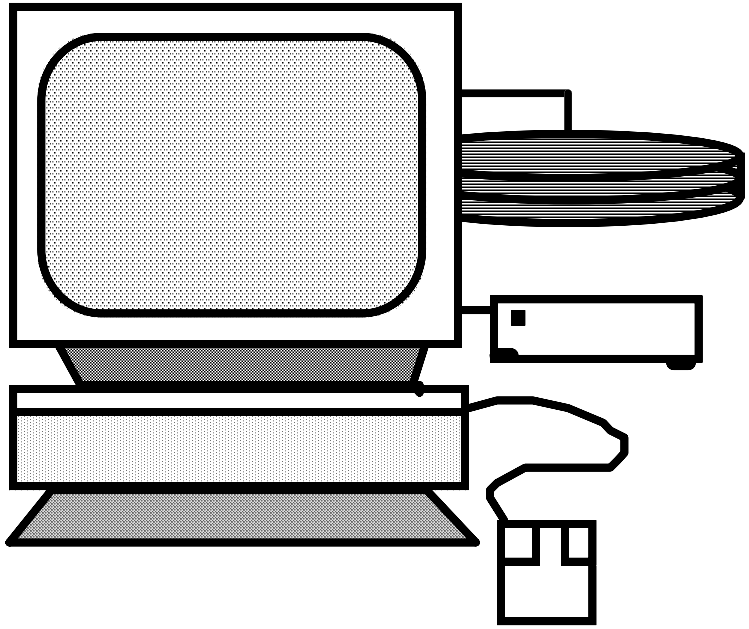
Input



Media Input Types

- 1840 Tape
- CDs
- Digital File Transfer
- Aperture Cards
- Paper

Data Integrity

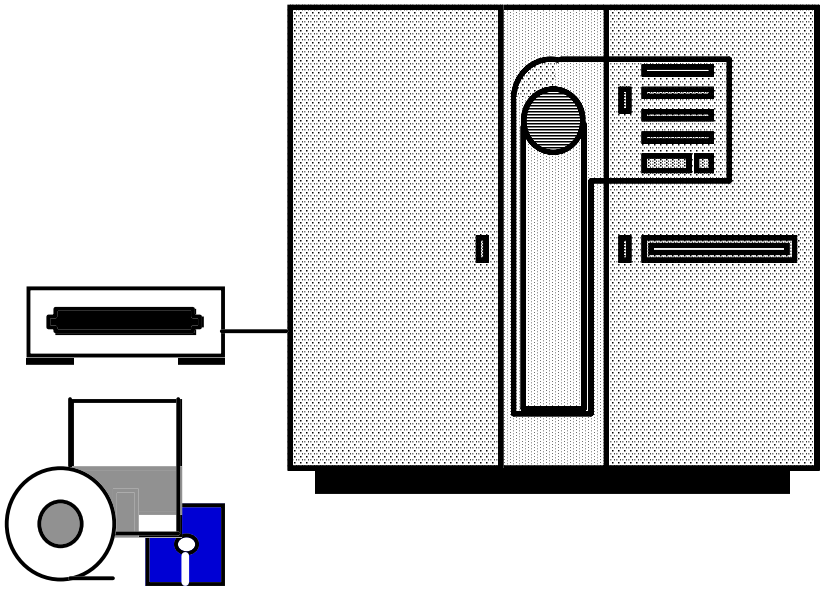


Quality Assurance and Control for:

- **All Data Inputs**
- **All Image and/or Index Changes**

Editing Tool for Index And Image Clean-up

Storage

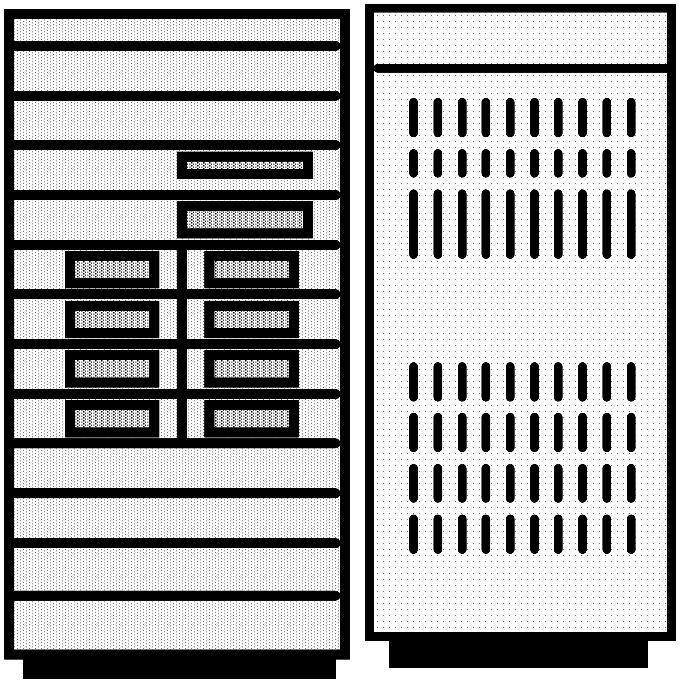


Optical Storage

- 10.2GB per 14” optical platter
- 1 Terabyte per jukebox
- Up to 4 jukeboxes per system

<u>Largest site has 5,757,732 images on-line</u>

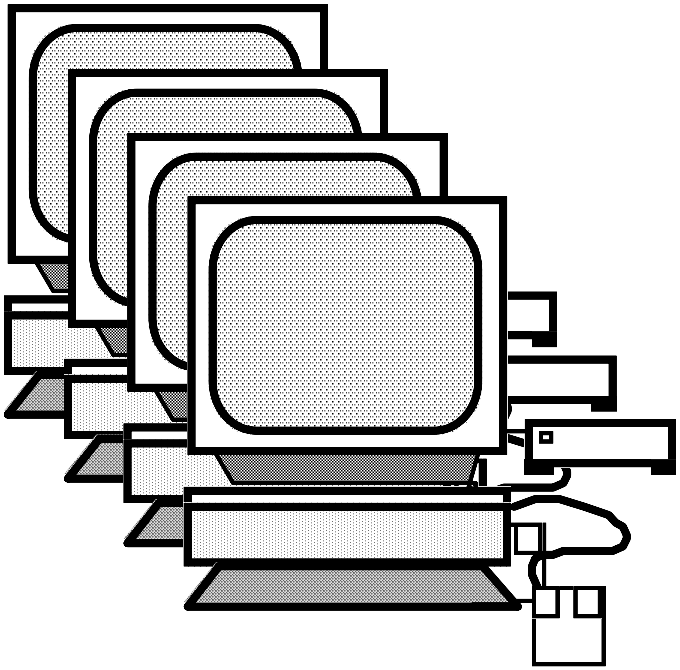
Index



- **Standard Indexing Scheme for all DoD**
- **Oracle Database**

Processor is Scaleable to support from 64 to unlimited simultaneous users

User Interface



Viewing:

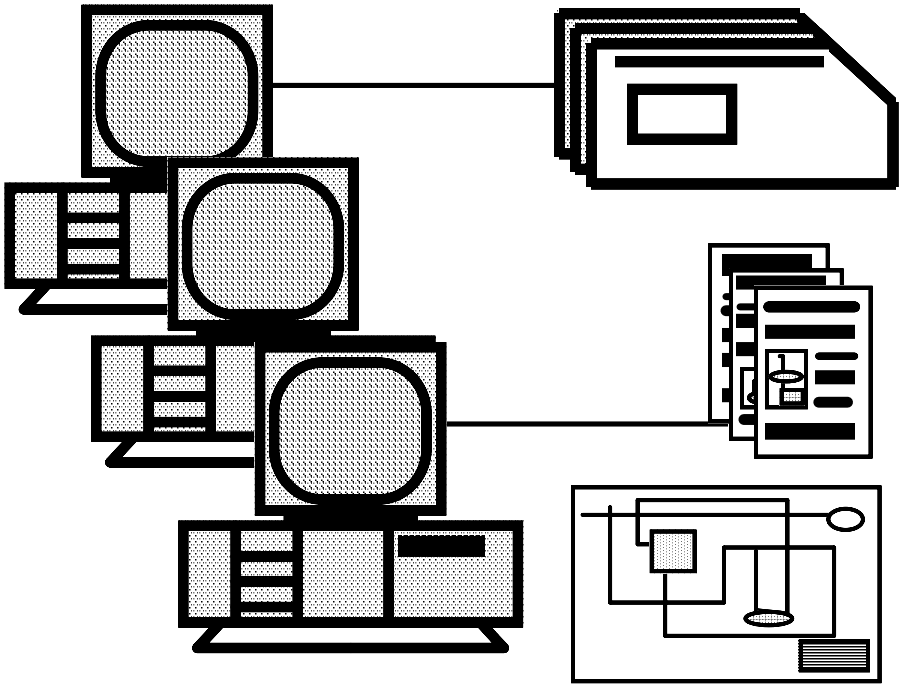
- Any PC Platform
- Running DOS & Windows 3.1
- 386 Processor or Higher

Engineering/Editing:

- UNIX Platform

Multiple System User Tools

Output



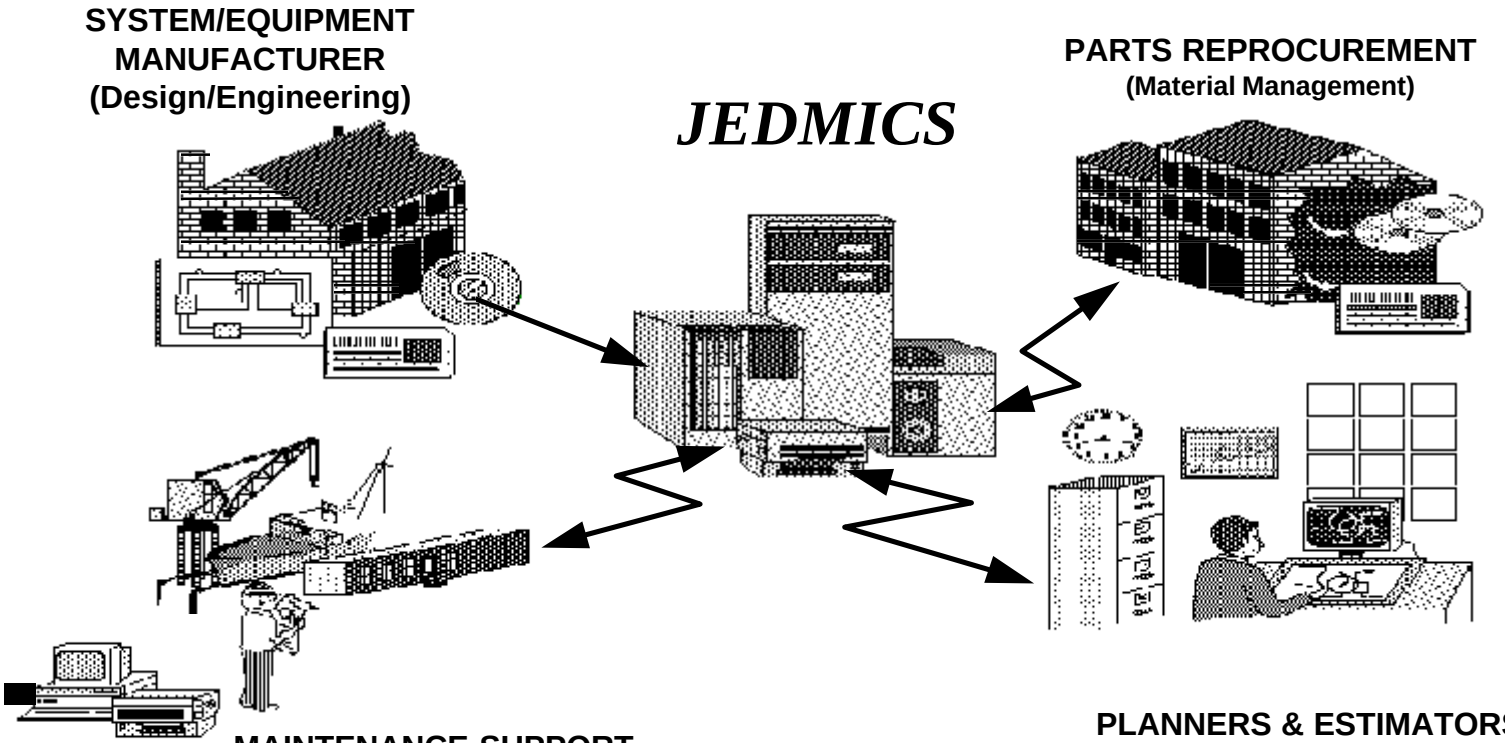
Hardcopy Media

- Paper Plots (A/B, C, E)
- Aperture Card

Digital Media

- Digital File Transfer
- CDs
- 1840 Tape
- 14 Inch Optical Disk

The JEDMICS User Community



The JEDMICS Owner Community

Deployed at 34 DoD Sites

- Army Material Commands
- Army Depots
- Air Force Logistics Centers
- Defense Supply Centers
- Naval Aviation Depots
- Naval Inventory Control Points
- Naval Shipyards

Each Site Supports Multiple Locations

JEDMICS ACCOMPLISHMENTS

- **38 MILLION IMAGES LOADED**
- **30 INSTALLED SYSTEMS**

NAVY/MARINE CORPS

NOS Louisville
Portsmouth Naval Shipyard
Navy Inventory Control Point
Naval Air Technical Services Facility
Puget Sound Naval Shipyard
Norfolk Naval Ship Yard
Pearl Harbor Naval Shipyard
NEDSA Port Hueneme
Naval Air Warfare Center, TSD, Orlando
NADEP North Island

Marine Corps Logistics Base, Albany

SUPSHIPS Bath Iron Works
SUPSHIPS Ingalls

** Data migration engine only

NOTE: Two (2) Developmental / Test Systems
- PRC Reston
- Test/Migration Facility, Huntsville

ARMY

AMCCOM Rock Island
CECOM, New Jersey
Letterkenny Army Depot
Anniston Army Depot
Tobyhanna Army Depot
Corpus Christi Army Depot
Red River Army Depot
MICOM Huntsville
ATCOM, St. Louis**
TACOM, Warren**

USAF

Warner Robins AFB
Tinker AFB
Hill AFB**
McClellan AFB**

DLA

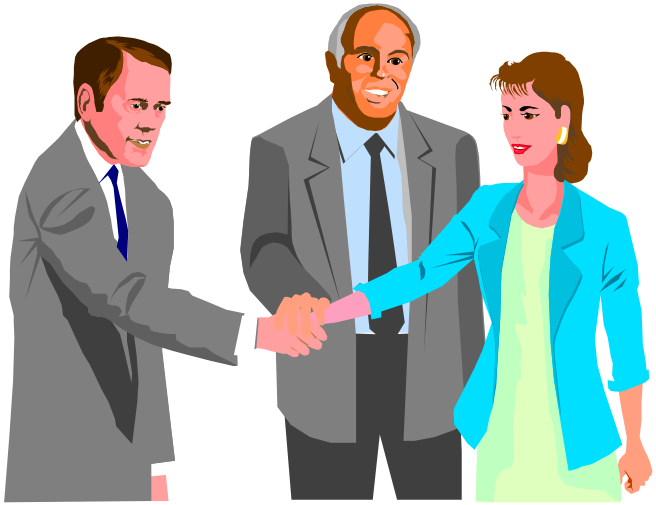
Defense Supply Center - Richmond
Defense Supply Center - Columbus
Defense Industrial Supply Center

TO BE ACCOMPLISHED

YOKOSUKA - 10/96
PICATINNY - 10/96
KELLY - 11/96
JACKSONVILLE - 2/97

ACCOMPLISHMENTS (CONT)

- STANDARD SOFTWARE CONFIGURATION
- STORING MULTIPLE DATA TYPES
- LEVERAGING GFE
  - Unbundled Software
  - API
- REMOTE CONNECTIVITY
  - Satellite Sites (29 at Rock Island)
  - PC_JEDMICS



TRUE JOINT PROGRAM

API PLATFORMS

CLIENT	SYSTEM	STATUS
IBM PC / Windows 3.11	CMIS / PC_JEDMICS BIW / RAMP / MIDAS	Complete
HP / UX	JCALS	Complete
IBM RISC 6000 / AIX	JCALS	Complete
PC / Unixware	ABI / JCALS	Complete
SUN Sparc / SunOS	BIW CADA	Complete
IBM PC / SCO UNIX	BAIM	Complete
Intergraph / CLIX	PC_JEDMICS / ATIS	Complete
DEC VAX / VMS	NEDALS	Complete
SGI Challenge / IRIX	JEDMICS	Complete
DEC ALPHA / MLS	JCALS	Awaiting Hardware

JEDMICS ENABLES PROCESS IMPROVEMENTS

SHARING ENGINEERING DATA FOR IMPROVED PRODUCT LIFE CYCLE MANAGEMENT

- **STORES ENGINEERING DATA IN STANDARD FORMATS**
- **ENABLES DIGITAL DATA INTERCHANGE**
- **PROVIDES DESKTOP ACCESS TO ENGINEERING DATA**
- **REPLACES OBSOLESCENT SYSTEMS**

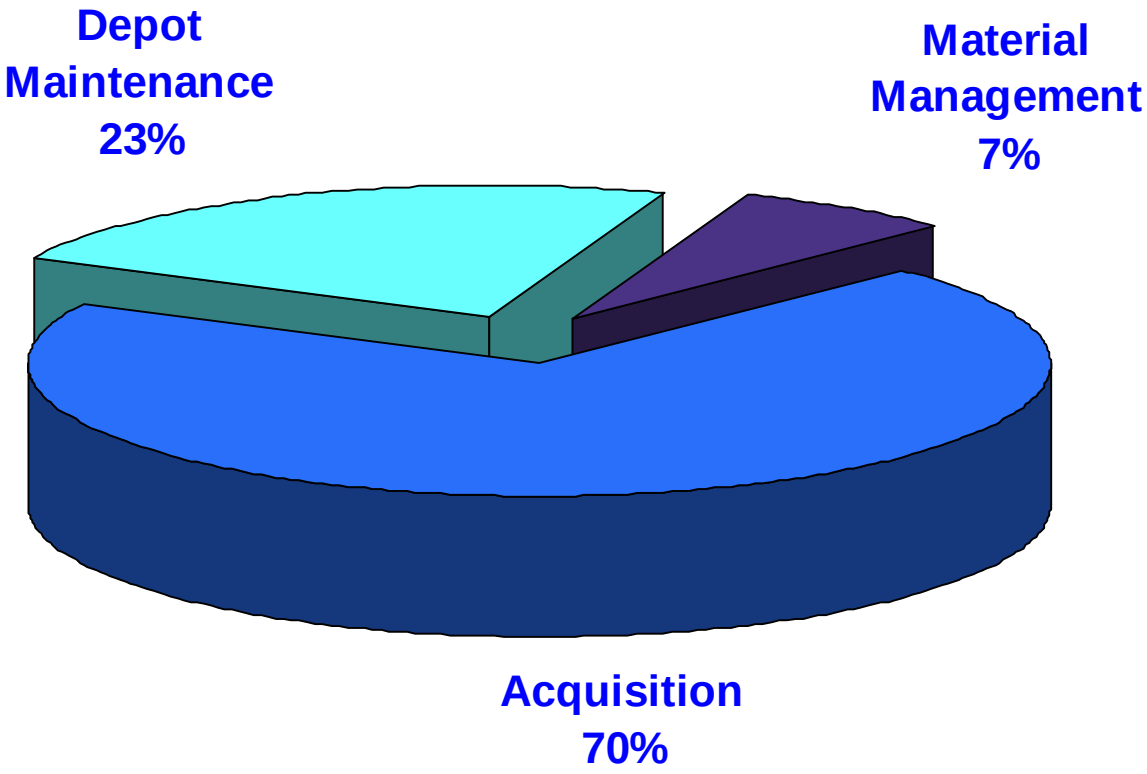
OPERATIONAL BENEFITS

- **REDUCED CYCLE TIMES**
- **REDUCED COST**
- **REDUCED REPOSITORY INFRASTRUCTURE**

JEDMICS BENEFITS

- ‘ENABLING TECHNOLOGY’ IN THE CALS PROCESS
- PRODUCES SAVINGS AND FACILITATES BUSINESS PROCESS IMPROVEMENTS
  - Global FEA Discounted Savings Investment Ratio 3.2:1
- REPLACES EXPENSIVE TO MAINTAIN LEGACY SYSTEMS
- SAVES ENGINEERING DATA CUSTOMERS DOLLARS
  - Wait Time Reduced from 3+ days to 5 Minutes (On-Site) and from 30+ Days to 30 Minutes (Off-Site)
  - At Bath Iron Works, Annual Cost Avoidance $415K in Aperture Card Processing and $200K in Digital Drawing Retrieval

Savings by Business Area



JEDMICS IS A SUCCESS

- VISION, BUY-IN, EXECUTION, AND PARTNERSHIP WITH SERVICES
  - Strategic Plan Developed To Support DoD
- EXPERIENCED MANAGEMENT TEAM
- ESTABLISHED LOW RISK ACQUISITION STRATEGY
  - Maximized Use Of COTS
- MAINTAINED CUSTOMER FOCUS
  - OSD/DoD Management
  - Repository Managers
  - Weapon System Managers
- PURSUED AGGRESSIVE TECHNOLOGY REFRESH PROGRAM

Where We Are Going

- COMPLETING PLANNED SYSTEM DEPLOYMENTS
- CONTINUING TECHNOLOGY REFRESHMENT
- IMPLEMENTING RELEASE 3.0 CAPABILITY
- EVALUATING STORAGE OF OTHER DATA TYPES
- EXPANDING DIGITAL INPUT/OUTPUT
- SUPPORTING ADDITIONAL LOGISTICS INITIATIVES
- EVOLVING TO SMART/JEDMICS