

## **DoD SOFTWARE REUSE INITIATIVE**

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## **Definition of Software Reuse**

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***The application of previously developed software life-cycle components to a new system or an expansion/enhancement of an existing system***

- **Requirements**
- **Designs**
- **Implementation**
- **Tools**
- **Documentation**
- **Test Suites**
- **Other (RFP Paragraphs, Forms, Resumes, etc.)**

# **Policy, Guidelines, Standards, and Procedures**

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- **Policy ... What and When?**
- **Guidelines for:**
  - **Developing Reusable Software**
  - **Domain Analysis**
  - **Business/Legal Issues**
- **Standards for:**
  - **Reuse Interoperability**
- **Procedures for:**
  - **Reusable Software Component Certification**
  - **Reuse Center**
    - Configuration Management**
    - Quality Assurance**
    - Installation & Operation**
  - **Reuse Training Program**

# **CSRO Customer Base**

**CIM Technical Integration Managers (TIMs)**

**Functional Information Managers (FIMs)**

**Migration System PMs**

**Approved DoD remote software reuse centers**

**Other DoD/Federal remote reuse Centers**

**Defense Information Technology Services Organization  
(DITSO)**

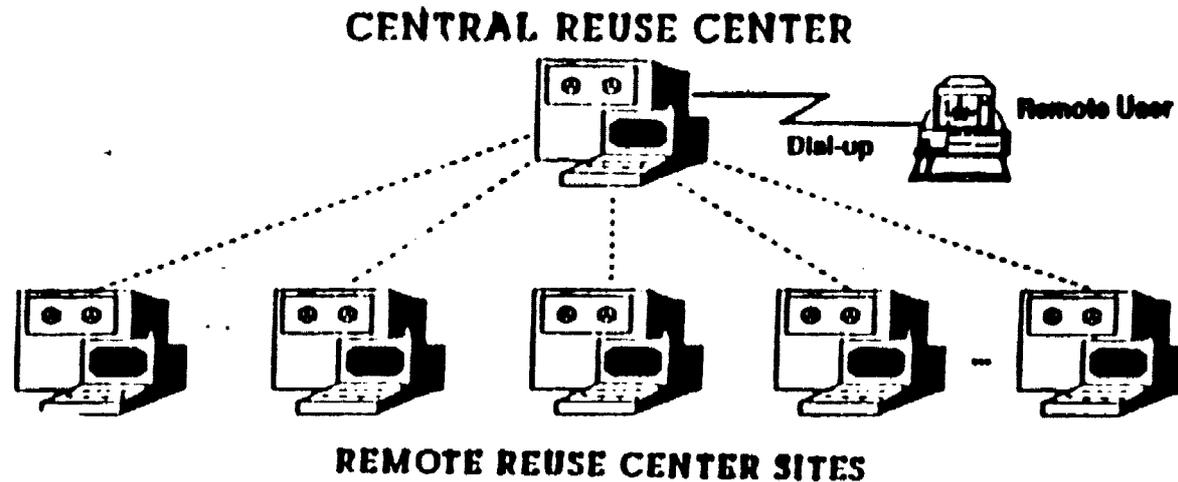
**Central Design Activities (CDAs)**

**Other DoD/Federal Information System developers  
(contractors)**

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# Initial Configuration

## 1 January 92

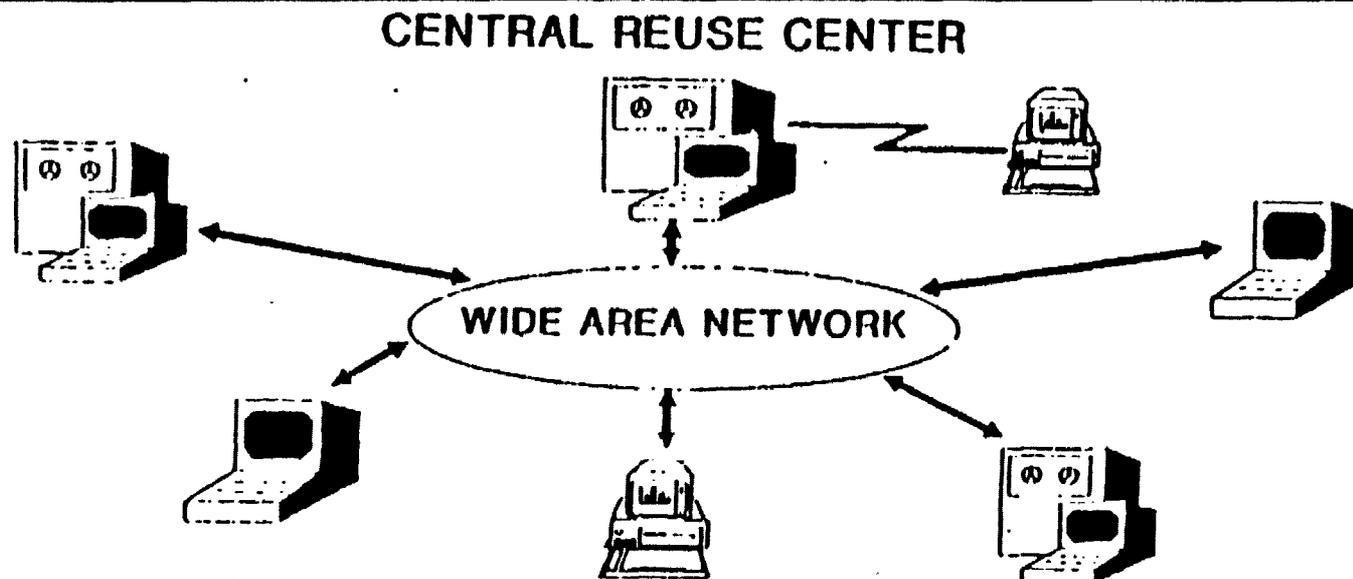


- Identical Reuse Library Environment at each Site
- Master Copy of Components Resides at Central Site
- Copy of Components Resides at All Remote Sites
- Central Site Manages Maintenance of Components
- Remote Sites Donate Components to Central Site
- Central Site Distributes Updated & New Components

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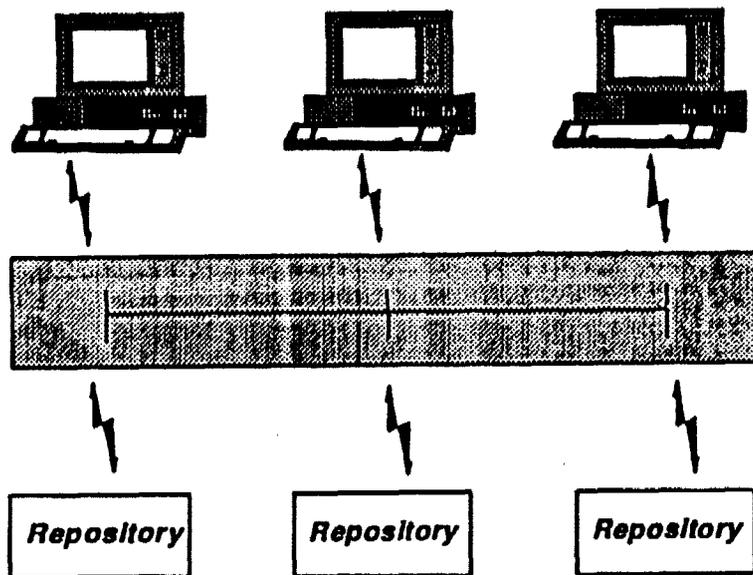
# Intermediate Configuration

1 Jan 93



- **Network Connectivity**
- **Master Copy of Components Resides at Central Node**
- **Node Specific Components Reside in Node Partitlons**
- **Search/Retrieval Mechanism at Each Node**
- **Automated Download/Uplcad to Remote Nodes**
- **Central Node Maintains/Distributes Component Catalog**

# Architectural Concept for the Future



## Search Systems

- \* General Purpose
  - Different Search Models
- \* Domain Specific
  - Contains Std and/or Proprietary Models
- \* Standard Interface to DSRS

## DSRS Infrastructure

- \* Single Access to All Repositories
- \* Provides DSRS Administration (access ctrl, fee for service, etc.)
- \* Uses Standard DoD Software Reuse Catalog Scheme
- \* Provides Inter-Repository Services
- \* Allows Users to Evaluate Components from Several Repositories

## Repositories

- \* Government or Commercially Owned
- \* Allows Standard Interfacing from DSRS Infrastructure
- \* Uses Standard DoD Catalog Scheme

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# **DoD Center for Software Reuse Operations Support Environment**

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- **DSRS Services/Customer Assistance**
- **Reuse Planning**
  - **Domain Analysis**
  - **Reuse Implementation Plans**
  - **Migration System Reuse Strategies**
- **Library Population**
  - **Population Strategies**
  - **Component Certification**
- **Reuse Education and Training**
  - **Designing for Reuse**
  - **Creating Reusable Components**
  - **Library Usage**
  - **Domain Analysis**
- **Reuse Procedures & Guidelines**
- **Reuse Metrics Collection & Analysis**

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# CIM Reuse Support Centers

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- - Air Force      SSC Gunter AFB, AL
- - Army            ISEC SDC-W, Falls Church, VA
- - Navy            NCTS-W, Washington, DC
- - Marines        CDA, Quantico, VA
- - DLA            DSAC, Columbus, OH
- - NSA            Ft. Meade, MD
  
- **Domain Analysis**
  - Domain Models
  - Domain Component Specifications
  - Library Taxonomy Verification
  
- **Reuse Planning**
  - Contributors/Recipients
  
- **Transfer Reuse Methods & Skills**
  - Domain Analysis
  - Reuse Engineering
  - Component Certification
  - Security
  
- **Test Bed**
  - Emerging Methods & Tools
  - Business Issue Solutions