Inventory Management System

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1. Inventory Management

1.1. Introduction to Inventory Management

1.1.1. Definition

Inventory Management is an enterprise-wide discipline concerned with the identification and tracking of Information Services (IS) hardware and software assets. Its three main areas of concern are:

- Acquisition.
- Redeployment.
- Termination.

Acquisition procedures are established to assist personnel in procurement of software and hardware products. Its main purpose is to ensure that proper justifications are performed and that financial guidelines are followed.

Redeployment procedures are responsible for ensuring that assets are tracked when moved from one location to another and that budgetary considerations are adjusted as needed. Should a product be moved in conjunction with its original owner then the Inventory System is updated to reflect the new location. Should a product location and owner change, then the Inventory System must be updated to reflect the new owner and their location. In this case, the old product is deleted from the original owner's budget and added to the new owner's budget.

Termination is responsible for deleting the asset from the inventory when it is discontinued, or replaced. The owner's budget will be updated to reflect the asset termination and the asset will no longer be listed when location reports are generated.

The **Inventory System** is maintained within a database that ties an asset to its owner and defines the location where the asset resides. The relative importance of the asset is added to the inventory record (i.e., Criticality = 1-5, where 1 is "Most Critical"). Based on this information the contingency planning specialist can plan asset recoveries needed to support critical business operations.

Like all databases, the Inventory System will only be effective if its information is kept current. To ensure the accuracy of the Inventory System, while not adding too great a burden to company personnel, every effort must be taken to implement processes that maintain inventory data with a minimum work effort from personnel

Inventory Management provides:

- Up-to-date information about data processing resources through the creation and archiving of records in a centralized repository.
- Financial records specific to a single component, or groups of components.
- Service records for all components in the inventory.
- Data used to support configuration diagrams of the hardware and software components contained within specific locations, or the entire data processing environment.

1.1.2. Scope

The Inventory Management discipline encompasses all system and data network elements from the mainframe through the server level to the PC or end component throughout the enterprise.

All mainframe and data network based hardware and software assets must be identified and entered into the Inventory System. Any changes to these environments must be reflected in the Inventory System.

Financial and technical product information must be available through the Inventory System, as needed to support the functional responsibilities of personnel within the finance and contracts management departments.

Asset criticality must be included with asset descriptive and financial information, so that the Recovery Management department is supplied with the information it requires. Recovery actions must be implemented to safeguard critical assets.

The Standards and Procedures Manual section relating to Inventory Management must be created and published. This section must describe the process by which assets are identified, entered into the Inventory Management System, tracked, and finally deleted. All information needed by personnel to perform Inventory Management functions must be clearly described within this S&P Manual section.

Finally, personnel responsible for implementing, supporting, and maintaining assets must have access to the Inventory Management System to identify asset information needed by them to perform their functional responsibilities. This process includes logging the availability or assets, their support history, and any maintenance activity performed on the asset.

1.1.3. Mission

The mission of an Inventory System is to provide a Central Asset Repository of information used to define assets and relate the asset to its owner, location, and relative importance. This information will provide personnel with data needed to support their job functions, for example:

- **Facilities Management** will be able to plan Heating, Ventilation and Air Conditioning (HVAC) requirements, as well as power and floor space needed to support equipment listed in the Asset Repository for a specific location.

- **Financial Services** will be able to budget for asset procurement, depreciate assets over time, and prepare complete tax documents.

- **Contracts Management** will be able to negotiate vendor discounts and enterprise agreements.

- **Contingency Planning** personnel will be able to develop recovery plans for mainframe and office assets contained within the Inventory System based on the assets relative importance (as stated within the Criticality field).

- **Technical** personnel will be able to resolve problems more quickly with the information contained within the Inventory System, because they will have a listing of the assets contained within a location and any support or maintenance activities associated on the asset.

The Inventory System should be integrated within the everyday functions performed by personnel associated with entering and maintaining asset information. The system will reduce the effort devoted to asset management, while supplying many personnel with the information they need to perform their functional responsibilities.

Every effort should be made to develop a central Asset Repository that covers the entire enterprise, rather than having separate Asset Repositories for mainframe, network, and distributed environments. Having a single repository will simplify accounting and asset management, while allowing for the implementation of enterprise-wide asset management standards and procedures.

1.1.4. Objectives

The objective of Inventory Management is to manage the physical and logical properties of I/S resources and their relationship, while ensuring that service level commitments are achieved. This process will:

- Ensure efficient and timely identification of vital corporate assets.
- Assist in managing the enterprise-wide inventory.
- Provide a common repository for asset protection.
- Plan and control the proliferation of assets across the enterprise.

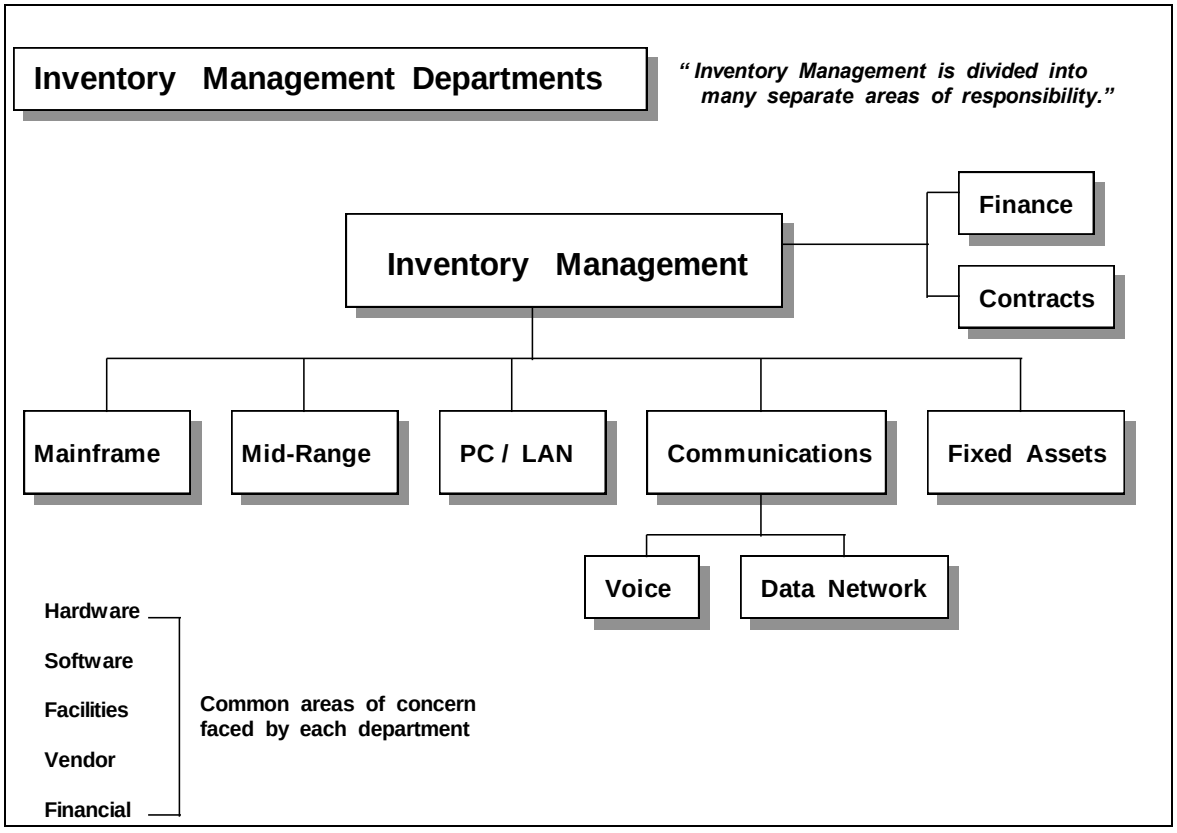
The objectives of Inventory Management are:

- To identify and track all data processing assets in an Inventory System Repository.
- To define the process by which assets are identified and maintained in the Inventory System.
- To provide Inventory System access to all necessary personnel (data entry, view, update and deletion).
- To provide a full range of reports that will satisfy informational requirements.
- To document the Inventory Management System within the Standards and Procedures Manual.
- To provide training to personnel responsible for supporting the Inventory Management System.

1.1.5. Functional Areas.

The functional areas that interface with an Inventory Management System are:

Figure 1: Overview of Inventory Management functional areas.

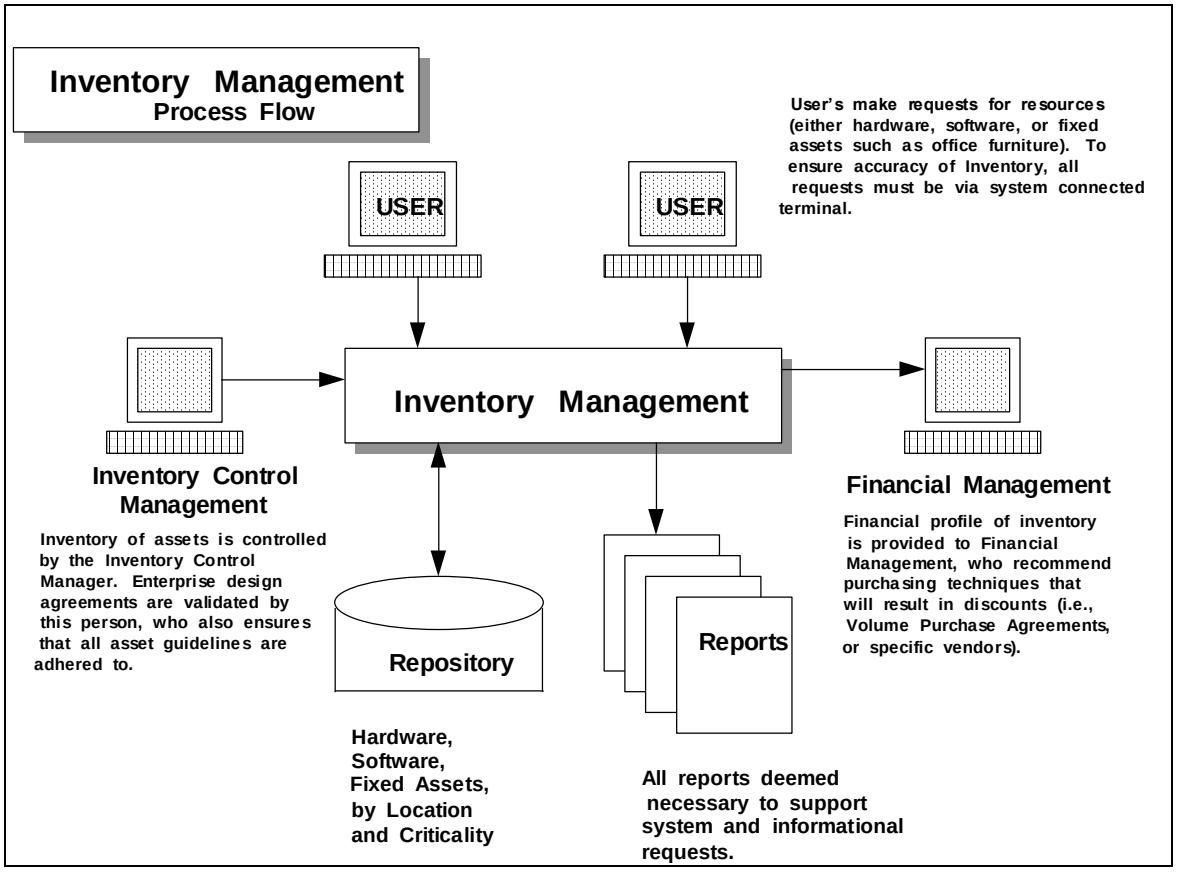


All of the functional areas listed above can utilize the information contained within the Inventory Management System's Central Asset Repository of information. Additionally, the Recovery Management area could utilize inventory information to identify an assets criticality (especially when the asset's location and owner are identified within the Inventory Management System). Through the use of reports generated from the Inventory Management System's Repository, it would be possible to obtain a listing of all "Most Critical" resources, by location and group. This report would then serve as the basis of a Business Recovery Plan.

1.1.6. Integrated Inventory Management System

To successfully implement an Inventory Management System, it is necessary to integrate it within the everyday functions performed by company personnel. That is, when a user wants to order equipment or software, they would call up the Inventory Management System screen associated with Acquisition. The same types of processes should be available for Redeployment and Termination of assets. Should a user request the acquisition of a specific type of asset then it would be possible for the inventory system to determine if the asset is already in surplus, or if it should be purchased under an existing Volume Purchase Agreement with a vendor.

Figure 2: Overview of an integrated Inventory Management System.

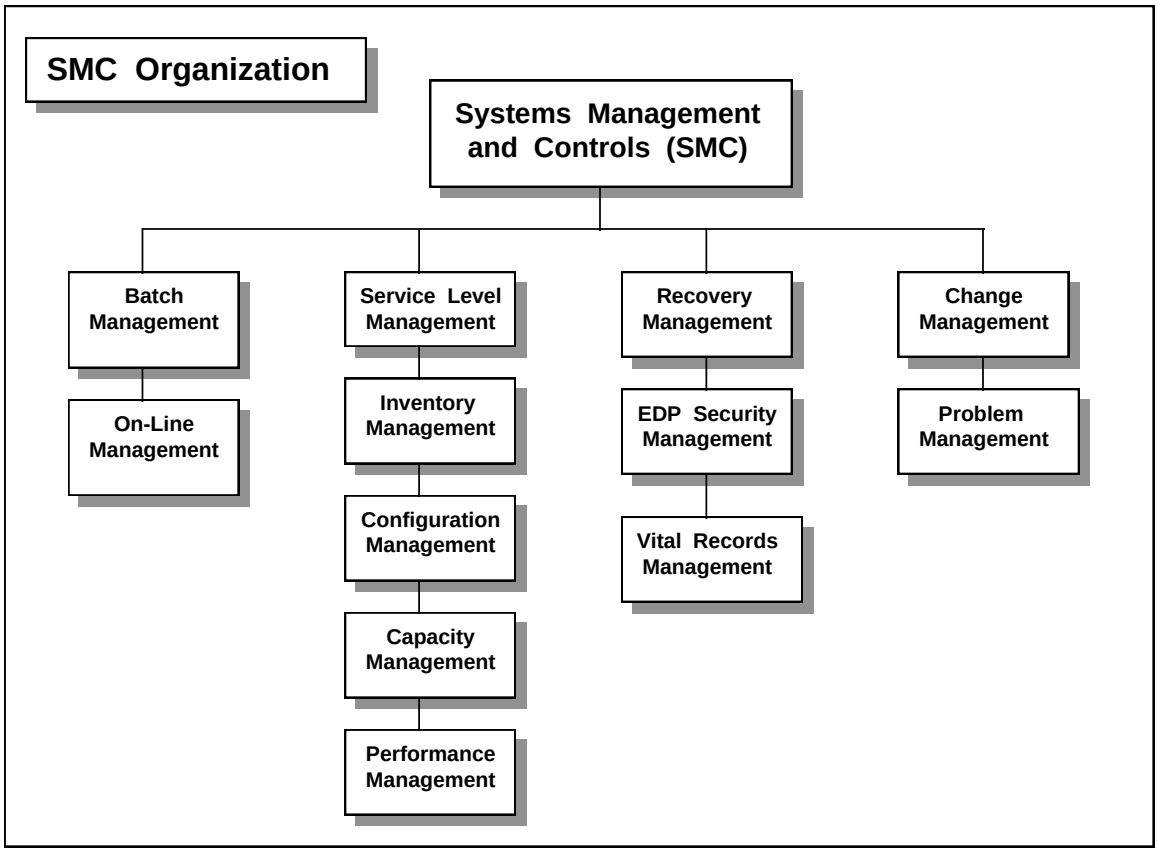


The utilization of Inventory Management Systems to control the purchase and installation of assets can aid in the control of the business environment, while assisting in the assignment of personnel to perform asset related work functions. This methodology will result in a workflow and asset management system that is optimized to the enterprise.

1.1.7. SMC Discipline Interfaces

The Systems Management and Control (SMC) disciplines that will interface with the Inventory Management System are illustrated within the diagram listed below.

Figure 3: SMC Discipline Interfaces .



The disciplines interfacing directly with Inventory Management and their functional responsibilities are:

- **Capacity Management** (i.e., PC memory and speed, DASD size, etc.).
- **Performance Management** (speed and usage information).
- **Change Management** (version and release information, benchmark, testing, etc.).

- **Recovery Management** (recovery planning for critical assets and sizing requirements for recovery facilities).

- **Service Level Management** (Service Level Agreements - SLA's and Service Level Reporting - SLR of user processing and service requirements).

- **Problem Management** (Change History, Problem History, troubleshooting, pathway, version and release information, etc.).

- **Configuration Management** (hardware, software, location, HVAC requirements, power, water, floor space, fixed assets, etc.).

1.1.8. Inventory Management disciplines and interfaces

The Inventory Management function is responsible for tracking all assets, from Mainframe based to Data Network based, that are connected to the data center or data network. In each case, the Inventory Management Systems must be able to:

- **Identify the asset and its serial number;**
- **Associate the asset with its owner and location;**
- **Relate the asset to its vendor;**
- **Track the maintenance level of the asset; and,**
- **Provide the asset's Problem and Change history.**

The ideal Inventory Management System should also:

- **Provide financial information related to an asset;**
- **Define the criticality of the asset; and,**
- **Supply history information for the asset.**

The Inventory Management System interfaces with the following departments:

- **Finance;**
- **Contracts;**
- **Systems Software;**
- **Technical Support;**
- **Change Management;**
- **Production Services;**
- **Facilities Management; and,**
- **Enterprise Management personnel.**

1.2. Process Description

The Inventory Management System process starts with the acquisition of an asset, then continues with the redeployment of assets, and ends when an asset is terminated. It interfaces with many personnel performing a variety of Systems Management Control (SMC) disciplines associated with asset implementation, support, and maintenance functions within the I/S organization as well as finance and corporate management areas throughout the enterprise.

The vehicle used to control the Inventory Management discipline is Change Management. Without adequate Change Management the integrity of the Inventory Management process cannot be ensured. These SMC disciplines and functions encompass both system and data network elements and feed the Configuration Management discipline.

Inventory Management inputs can come from either the Network or Systems area and can include a variety of input methods:

1.2.1. Network

The Network area must account for new acquisitions installed as a configuration in a specific location. Because the complexity of today's networks makes tracking new acquisitions difficult, it is advisable that tracking be accomplished through the use of discovery type applications, which monitor and interrogate asset changes automatically. This type of tracking would capture vital product data (VPD), or perform product identification, which is generally imbedded on PC-type products by the manufacturer. This information should include product type, serial number, maintenance level, features, and othe asset information which can be inputted to the asset database record as a foundation element.

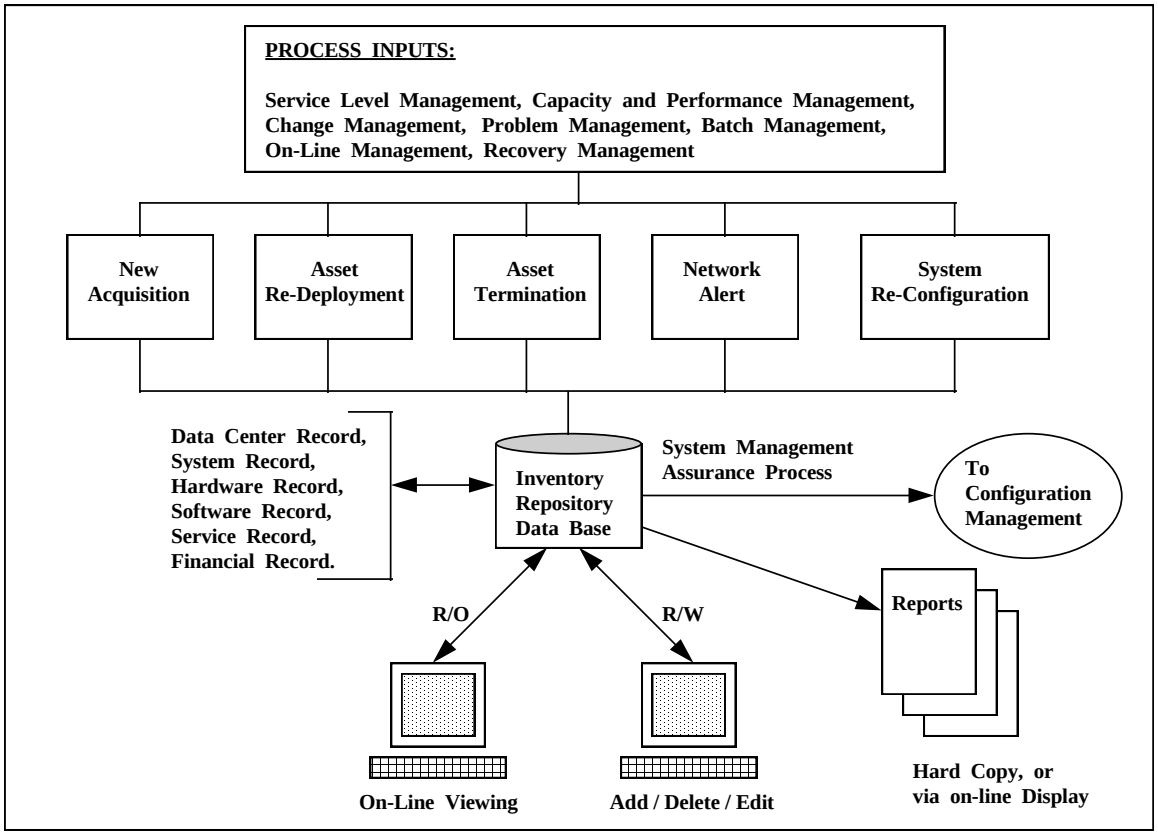
1.2.2. System

System level assets can be identified through automated tools used to extract asset information like: asset type, serial number, features, maintenance level, etc. Within the system area changes to the physical environment are systematically reported through the integrated change process. This discipline incorporates all hardware and software reconfigurations or updates. All inputs to the centralized database will be subject to the change process.

The following page contains an overview of the Inventory Management process.

1.2.3. Inventory Management Process

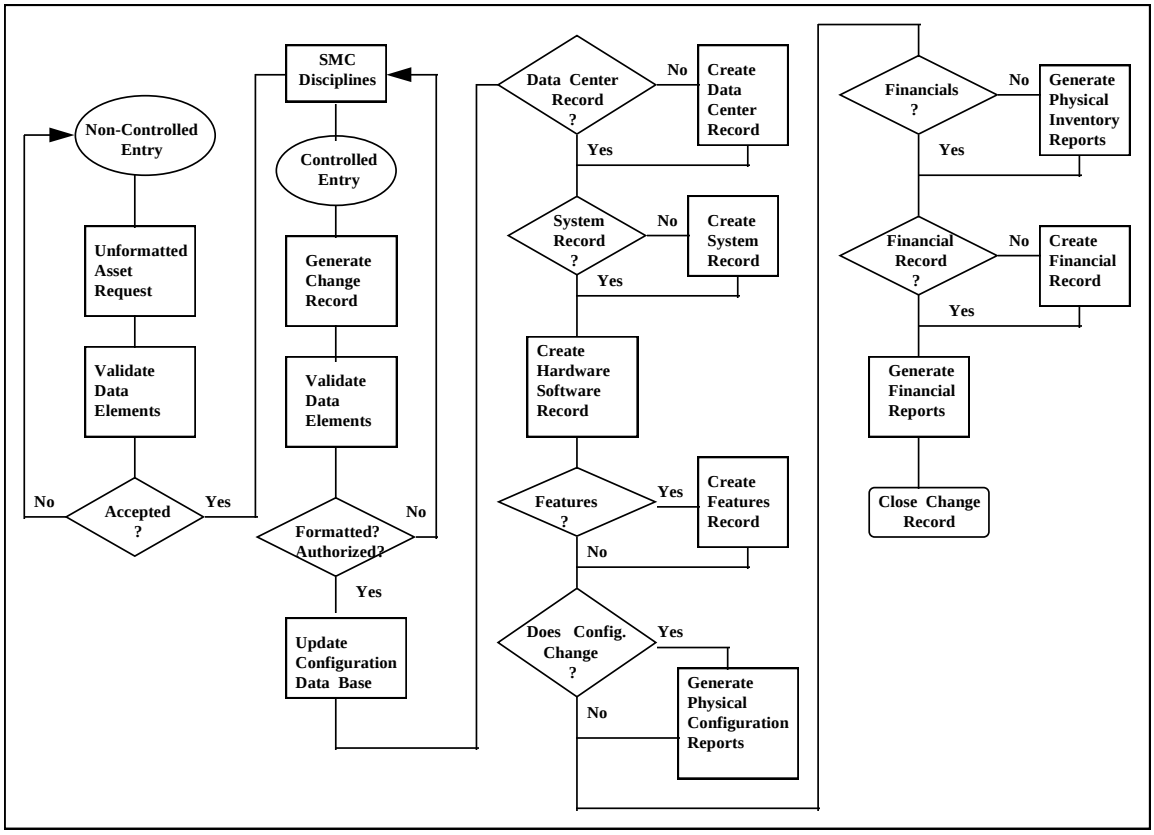
Figure 4: Inventory Management System - Overview of Process



The above provides an Overview Diagram of the Inventory Management process, while the following illustration provides a Flow Diagram of the Inventory Process.

1.2.4. Inventory Management Flow

Figure 5: Inventory System Flow Diagram



The inventory process starts with Non-Controlled Entry, or Controlled Entry of an asset, then proceeds by generating an Asset Database Record, including: asset information, location, and financial information.

1.3. Process Flow.

The process is entered as a Controlled or Non-Controlled Asset Change Request (ACR) as follows:

1.3.1. 1. Non-Controlled ACR Entry:

- ACR received by any method other than the Change Control process.

  - Confirm all necessary information is available about the asset.
  - Request is reviewed locally for acceptance.
  - Problems documented and returned for resolution.
  - ACR accepted and authorized.
  - Request forwarded to Change Control process for input as a Controlled ACR.

1.3.2. 2. Controlled ACR Entry:

- Validate all data elements are present in the Change Record.
- Reviewed by all I/S organizations accountable for asset control.
- Problems documented and returned for resolution.
- ACR accepted and authorized.
- Update Inventory Repository database.
- Create data center record associated with the asset.
- Create system record associated with the asset.
- Create component record associated with the asset.
- Create feature records associated with the asset.
- Generate physical configuration reports and distribute.
- Create financial records if appropriate.
- Generate financial reports if appropriate.
- Generate physical inventory reports and distribute.
- Close the change record.

1.3.3. Implementation of Inventory Management

Efficient processing and operations management starts with an integrated approach that links all facets of system management together. Inventory Management is just one of the disciplines. Each augments the other, and provides the ability to effectively manage a large systems environment.

Accurate inventory data is vital. A lack of accurate asset data affects the other disciplines ability to function. The automated element of inventory management monitors the enterprise-wide data network processing environment for change, while the system environment relies on the change process (which may or may not be fully automated) for accurate input.

The products and tools that comprise the Inventory Management System use data network definition information, Vital Product Data, local configuration definitions and in some cases, discovery applications to arrive at inventory information.

This process must embrace the following areas to be effective:

1.3.4. System Environment

Today the system programmer can define hardware configurations for multiple MVS/ESA operating systems through Hardware Configuration Definition (HCD). HCD reduces complexity and shortens the time required to successfully define an I/O configuration by providing a panel-driven interface, panel defaults, and data entry validity checking.

Dynamic reconfiguration management allows the support organization to implement system configuration changes without interrupting system service. The system's availability is not interrupted by an Initial Program Load (IPL) to change the hardware configuration, or an IPL to change the software definition for devices, control units, and channel paths. This ability to dynamically reconfigure works in conjunction with HCD and allows the new system configuration to be implemented without interruption.

Enterprise Systems Connection (ESCON) Manager enhances user control and manageability in an ESCON architecture environment when changing ESCON Director (ESCD) configurations. The changes are entered at a host processor rather than at the local ESCD consoles in the mainframe environment.

HCD and ECSON are highly dynamic tools, which can effect configuration changes easily and swiftly. However, there are no automation techniques currently in use that directly update the inventory database. Updates to the inventory database require manual data entry, therefore it is important that these interfaces to HCD and ESCON be constantly monitored and proper change control exercised to maintain asset integrity.

1.3.5. Network Environment

The complexity of the network environment requires an integrated set of facilities to store and display network configuration data for all network resources. This includes OSI, TCP/IP, SNA, Ethernet, and any other network resources. These facilities are tailored for network operational use and contain information that is pertinent to hardware and software inventories (e.g., Vital Product Information).

When dealing with large networks the immediate problems associated with the collection of asset information is enormous and therefore subject to significant errors. If the configurations are too complex, they become impossible to manage or understand. The typical network is composed of many nodes extending to many different topologies. The technique commonly used to manage networks is to break up the larger networks into smaller, manageable units. Once the management of these clusters is underway, you can proceed to manage several clusters from a higher node in the configuration hierarchy. This allows for greater control and accuracy.

On the other hand, if the configurations are too granular, the system can become a collection of small configurations with no relationships established between each other. For example, when defining a large 3745 network, we first define the lines, along with their drops, as separate configurations. We then connect these lines to the 3745 in another configuration. This logic can be applied to other layouts as well, including the client/server arena.

Although the industry direction is to automate network asset control as much as possible, managing the entire configuration does not necessarily have to be automated from the start, especially within the enterprise. It is our primary purpose to reduce the amount of manual work and the possible human errors typically found in current network configuration and asset management processes. Therefore, the technique presented here does not provide the Company with the complete automation process for the entire enterprise configuration. Rather, we recommend that you begin the initial steps for replacing much of the tedious work of entering and updating configuration data manually.

1.3.6. Data Requirements for Inventory Management

To ensure a consistent, centralized and integrated control, as described in the previous section, a common data model must be built. This will ensure a consistent reporting process to the inventory database regardless of where the data is stored.

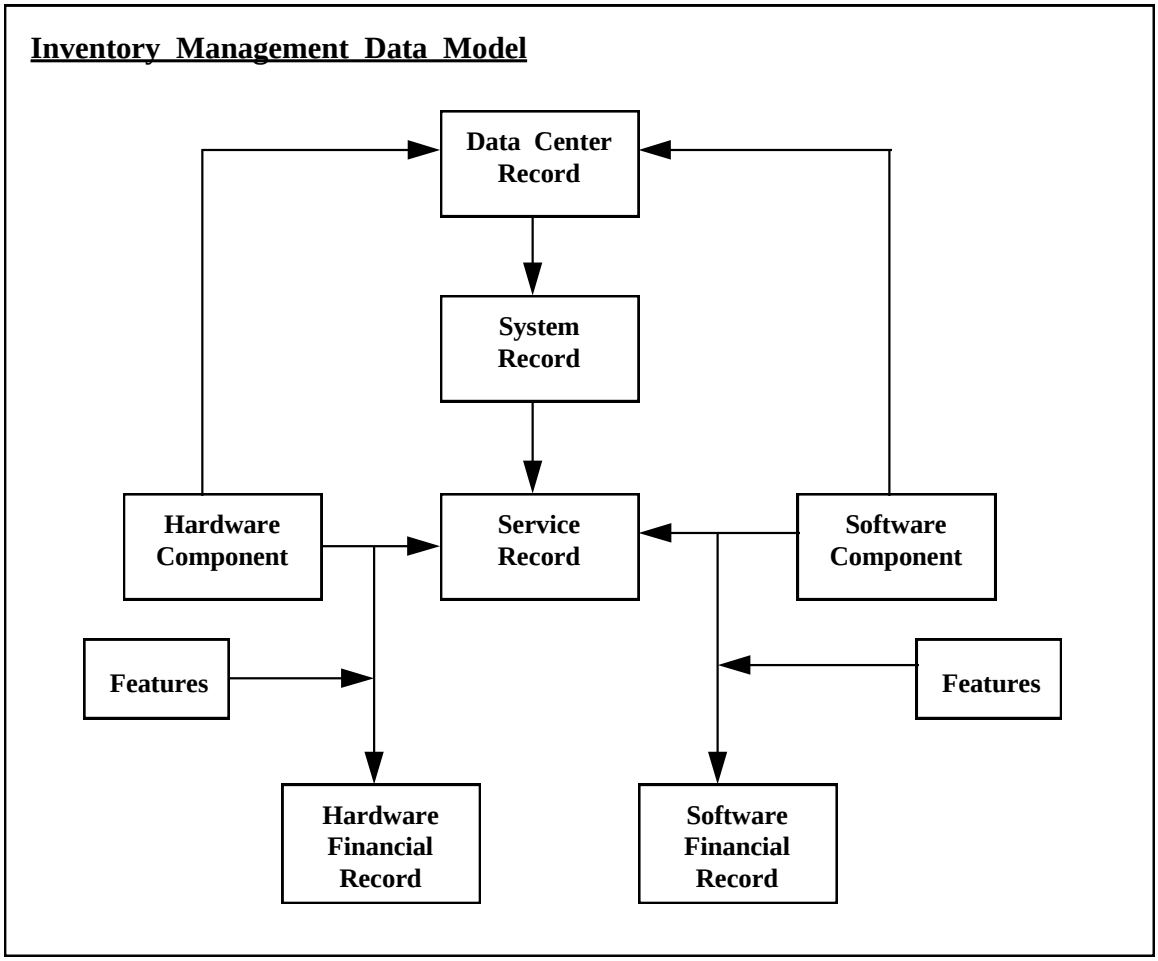
In the event of incomplete record information, the inventory management area must re-solicit, or advise the responsible asset area of the missing data elements. This reentrant approach provides a disciplined strategy to build a reliable inventory.

The structure illustrated in the next diagram allows the description of hierarchical relationships among data centers, systems, components, service organizations, and financial data. By entering descriptions of the hardware and software system components, along with information about their status and support data, a database can be built which supports parent/child relationships.

The figure on the next page shows the interrelationship between component records:

1.3.7. Inventory Management Data Model

Figure 6: Inventory Management Data Model



The following items are required from asset sources to support an integrated Configuration Management approach.

1. Data Center Record.

This record contains on-line information about the data processing centers, the system name, location codes, emergency phone numbers, managers, and contact names. The software and hardware components, and system records will refer to this record.

2. System Record

This record contains information relative to each processing system within the processing center. This record should contain the system names by LPAR, location codes, operator names, and support numbers. Software and hardware components can refer to this record.

3. Service Record

This record contains the service organization's data. Maintaining service organization records is advantageous when a user is displaying a record of a failing component. This record should contain the name, location, prime-shift phone number, off-shift phone number, hardware and software representative's name, contact phone numbers, and a description of the service organization. Hardware and software components can refer to this record.

4. Financial Record

Helpful information in this record assists in warranty and service incidents. Hardware financial records contain a user financial id, a financial type, and a description. For software records the same information is required in addition to a license type record entry.

5. Hardware Components

For hardware component records a consensus must be reached on the hardware types to be managed. A hardware model record for each hardware type will be created and all common hardware components will be entered using this template. This record should contain the following information:

- Component ID,
- Serial Number,
- Generic device type,
- Model,
- Manufacturer,
- Owner,
- Install Date,
- Location,

- Maintenance Vendor,
- Contract type,
- Component status,
- Component description.

In some instances a hardware subcomponent record must be entered. A subcomponent can be thought of as a feature that can be a stand-alone component and has mobility in the inventory (for example, 3726, 3727, external hard disks). This will allow subcomponents to be removed or moved from their hardware component or attached to another component. This record should contain a subcomponent status code and a description.

6. Software Components

For software component records a consensus must be reached as to what level of installed software will be within the scope of the asset database. For example, is the workstation (PC-based) software to be managed? If so, are we to account for all application software or just operating system software?

The answers to these questions are linked to what kind of information the user support groups require to provide service to the client. In a centralized Help Desk environment, all user application software, including maintenance levels, are maintained. This provides up-to-date information to the Help Desk personnel about the user environment and adds greatly to their productivity.

A software model record for each component contains an ID, maintenance level, program type, status and a description. A typical software record should contain the following information:

- System (application runs on),
- Name,
- Model,
- Vendor,
- Serial Number,
- Renewal Date,
- License Type,
- Contract Type,
- Maintenance Level,
- Description.

7. Feature Components Record

This record identifies associated features and relates these features back to other records.

8. Model Component Record

The industry uses this type record as a productivity tool to greatly enhance the ability to build large data bases quickly with minimum data entry errors.

Model records themselves do not hold configuration data, but they make the entry of data easier by allowing the creation of component records from models that hold information common to a number of components (or subcomponents) of the same type.

The model capability also provides the ability to build one or many relationships between model features and hardware or software components. Features that are common to many components can be contained in a single model feature record that is referred to by many component records.

1.3.8. Collecting, Monitoring and Reporting Data

1. Monitoring and Reporting Data

Once the inventory database has been built it will be used to satisfy the following requirements

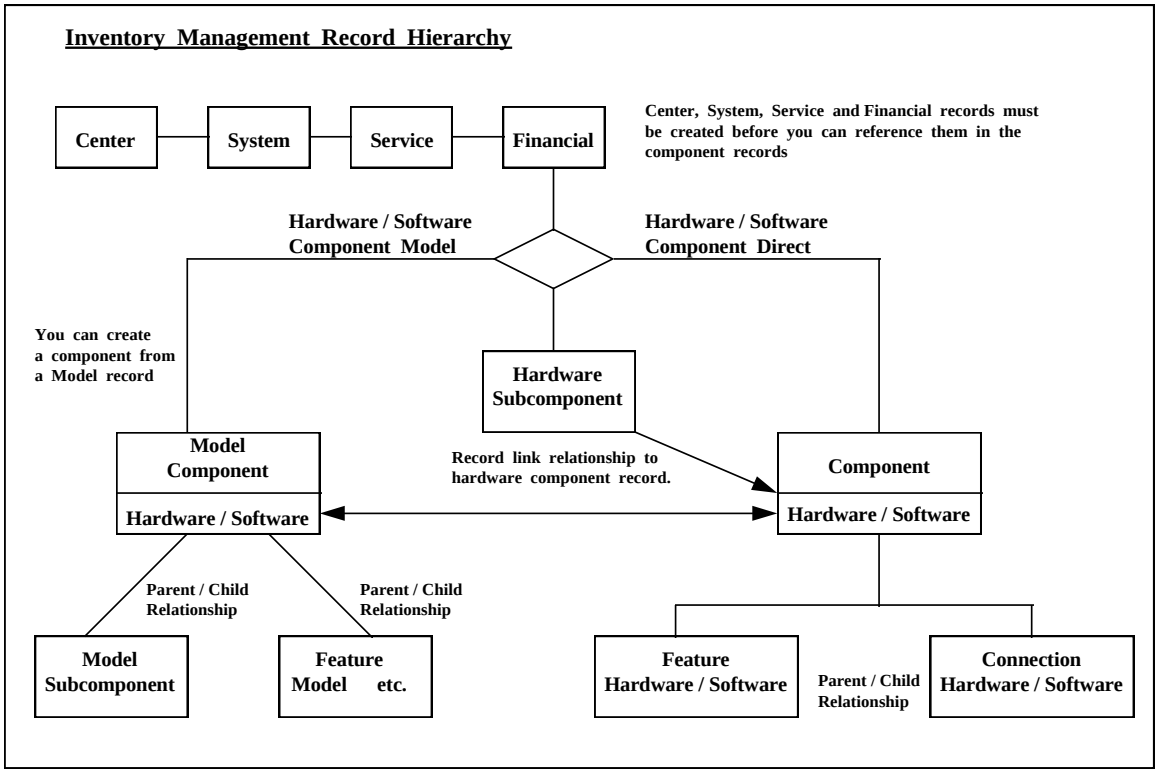
- Determine bypass and recovery procedures when a failing component has been identified.
- Determine the level of a component, and also other components that are affected when a problem occurs.
- Establish relationships between a component and any problem or change record in the database.
- Search for any components meeting specific characteristics, such as all terminals in a network and the locations to which they are assigned.
- Generate reports on specific configuration information, including but not limited to the following:
    - Hardware or software components with related features,
    - Physical inventory by location,
    - Hardware and software configuration maps, and
    - Service reporting for maintenance contracts, warranty, and invoice tracking.

2. Collecting Data

The Record Hierarchy in the following diagram indicates that component records refer to data center, system, service, and financial records. These four records are informational components. This means they must be created prior to creating the component records (hardware, software). It saves time because these records must be defined before they can be referenced in component records, which allows you to establish connections as you create the records.

1.3.9. Inventory Management Record Hierarchy

Figure 7: Inventory Management Record Hierarchy



1.4. Discipline Relationships

To ensure the integrity of the process, Inventory Management must interface with multiple business and I/S system management functions. The interface to these functions provides the foundation for strong Inventory Management practices.

1.4.1. Business Function Interfaces

Some of the more common business functions that interface with Inventory Management include:

- **Purchasing**

This resource manages all information systems requirement identification through the procurement process. Inventory Management provides input to Purchasing in terms of system and network standard asset information.

- **Accounts Receivable / Payable Department**

This function collects usage data and bills information System (I/S) expenses to the appropriate users. It supports accounting, budget planning, tracking of project costs, and other activities. Inventory Management provides financial records as input to the Accounts Receivable / Payable process and vice versa. This two-way interface occurs with the approval and submittal of billings for payment.

- **I/S Management Committees**

These groups investigate tools and services to provide policy information and translate that data into recommendations for I/S productivity improvements and services. Inventory Management will provide input to these groups in terms of product standards and technology strategies.

- **Strategic Planning Committees**

These groups deal with long-range planning and the integration of I/S objectives with the business objectives of the enterprise. Inventory Management provides an interface to Strategic Planning by providing insight into device migration patterns, trends, and direction, and the Strategic Planning Committees provide information back to the disciplines as well.

- **Security Department**

This function manages the registration or enrollment of people and programs to access controlled I/S resources. Inventory Management provides input about device configurations and security interfaces to this functional area.

- **User Support Groups**

Since these groups are responsible for their equipment acquisition, they must be compliant with the inventory process. Tracking the acquisition of network and computer equipment at the local level can be difficult without their full participation. To ensure accountability of such purchases, provisions should be made for a periodic physical inventory of such groups to ensure a level of inventory integrity.

- **Client Support Services**

These groups define the services that will be needed to support the I/S clients within the enterprise. Within Services Management are two key areas:

1. **Help Desk** - This area provides a single point of contact for clients to request services and obtain resolutions for problems.

2. **Service Level Planning** - This area identifies the agreement between the I/S organization and the user community that defines the level of service. The service level agreement is also used to define policies for operations and performance management.

1.4.2. System Management Interfaces

The Inventory Management discipline is dependent upon various disciplines and functions within the enterprise in achieving its objectives. These disciplines and functions and the assumptions related to their tasks are listed below:

- **Change Management**

Coordinates the various tasks performed in configuration change and testing across the data processing environment. Any changes to the I/S environment that affect Inventory Management will be inputted from this discipline.

- **Problem Management**

Assists the I/S organization in locating, identifying, and resolving inventory problems. The Problem Management discipline will provide input to Inventory Management as problems arise that require changes to resolve conflicts.

- **Facilities Planning**

Required to participate in the Problem or Change process as they pertain to the physical environment and is accountable for any actions needed to adhere with the inventory management process. It is essential that the Facilities Planning group provides input to Inventory Management and vice versa, to ensure changes in physical asset configurations are noted.

1.5. Inventory Management Tools

Inventory Management uses network definition information, Vital Product Data (VPD), local configuration databases and, in some cases, discovery applications in order to arrive at inventory information.

The following list of Inventory Management tools was accumulated after conducting a general survey of large corporations in the area. The participants represented large corporations with an annual I/S budget of over $100M. The survey solicited information about how they performed Problem, Change, and Inventory Management and what techniques and tools were used to accomplish tasks in the two areas that follow.

Products specifically mentioned, were approved by the vast majority of participants. We also list major Inventory Management functions that can be fulfilled by any number of products, but do not specifically mention a product by name.

1.5.1. Asset Management at the System to Server Level

The major components that provide the collection and reporting vehicles for Inventory Management from the system level out to the network server level include:

- **VTAM and NetView**

  VTAM and some specialized features of NetView are responsible for maintaining the necessary linkages to the physical asset, whether it is within the system complex or out to the server level on the network.

- **Centralized Data Bases**

  All assets and their associated information are stored in a centralized database. Editing and browsing capability are available through an on-line menu driven, front-end that provides restricted security access, if necessary. This security is provided through any number of host-based security packages.

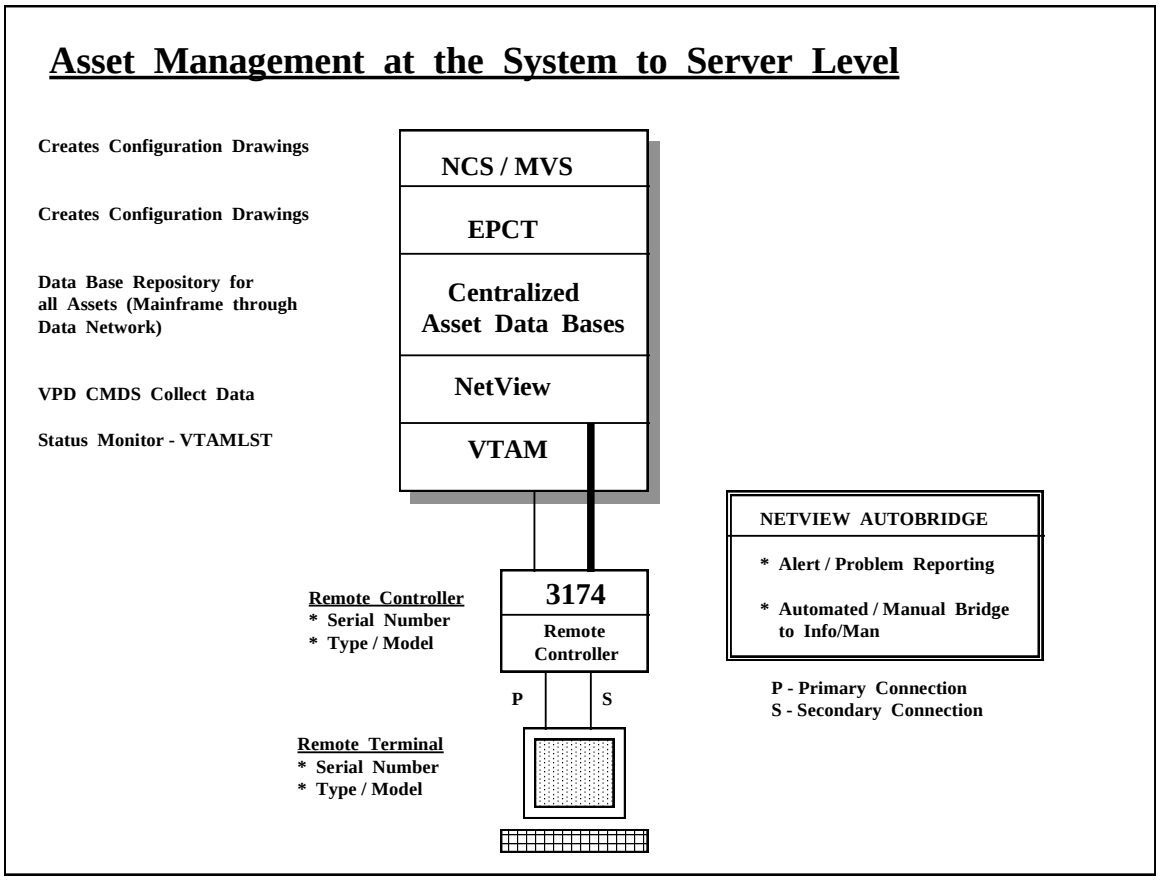
- **Network Configuration Application (NCA) / MVS**

NCA/MVS is a useful tool for migrating existing stand-alone (PC-based) inventory control databases to host-based formats. It should be noted that in some cases conversion utilities have been written to convert these stand-alone environments into a data base file structure.

- **Enterprise Physical Connection Tool (EPCT)**

EPCT is a useful product for building configuration databases and producing physical and logical diagrams. The figure below illustrates the usage of these tools within the process.

Figure 8: Asset Management at the System to Server Level



1.5.2. Industry Standards

- **Centralized Inventory Data Base Repository**

The industry uses any number of system management products that integrate the entry of Problem, Change, and Inventory Management into a common, centralized data base repository. However, these integrated products must interface to the tools listed below to facilitate the automation ad centralization of an asset management data base repository.

- **VTAM Version 3.4 (Planning and Reference Guide - SC31-6124)**

VTAM Version 3.4 is a telecommunication access method that works in conjunction with MVS/ESA Version 4 to support non-disruptive addition of channel-connected communications controllers and SNA cluster controllers.

- **NetView Ver. 2 Rel. 3 (User's Customization Guide - SC34-4336)**

Network Manager, which will provide:

1. **NetView Bridge Adapter** (NetView Bridge Adapter Reference - SC34-4336)

A component that provides a set of application-to-application interfaces that will provide an effective means of connecting NetView to external databases.

2. **Status Monitor Function**

Collects status information about SNA resources such as hardware data (from VTAMLST) and reports to a centralized database.

3. **NetView Autobridge Version 1** (User's Guide - SC34-4318)

NetView Autobridge will allow the flow of configuration and change data from NetView to a centralized Data Base Repository.

4. **RODM - Resource Object Data Manager**

The Resource Object Data Manager will provide services that enable systems and network management. The facility is used by NetView's multi-vendor graphic enhancement and automation platform. These services will be used to create configuration drawings of the asset database.

5. **Network Configuration Application/MVS (NCA/MVS) Version 1** (User's Guide - SC31-6149)

Network Configuration Application/MVS is a configuration application for use on an MVS platform. It provides for collection of information about equipment, circuits and software; has the ability to create configuration representations for components in all types of network topologies; and allows for creation of abstracts to represent relationships of components. A utility function transforms this data into the format required by the Resource Object Data Manager Facility in NetView Version 2 Release 3 for graphic views.

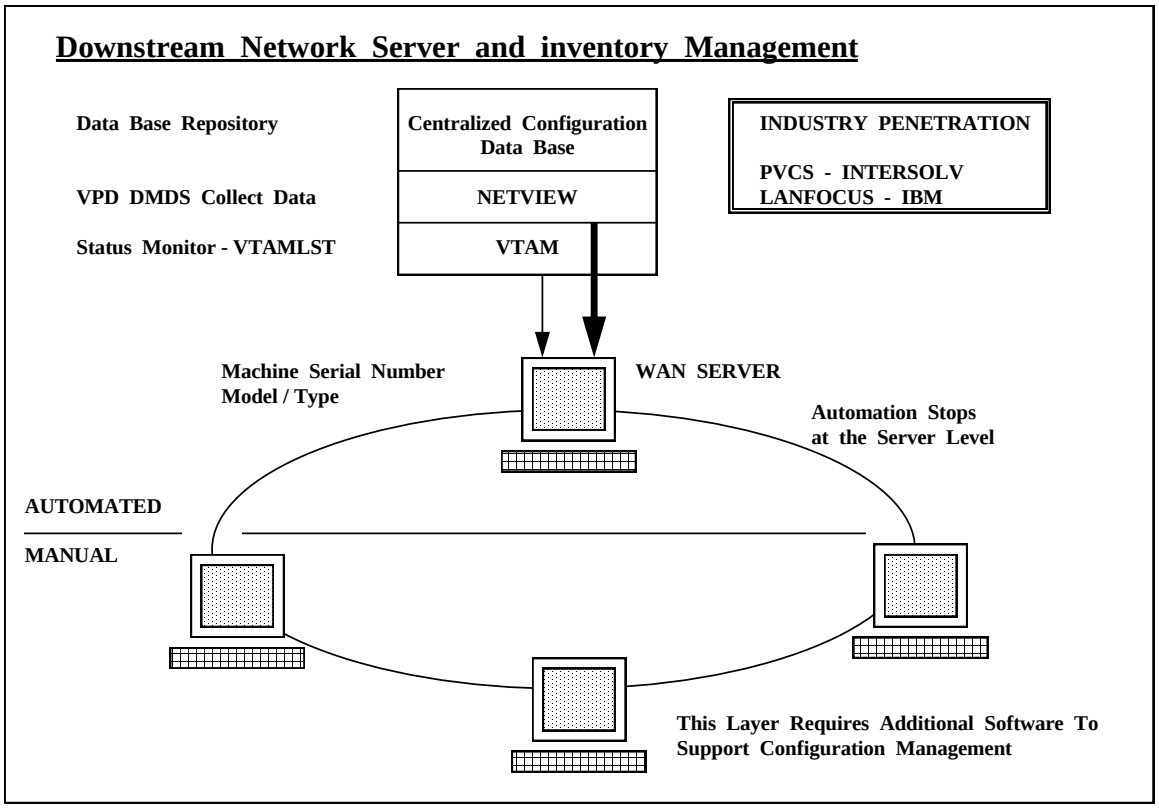
6. **Enterprise Physical Connection Tool (EPCT)** (User's Guide - SC23-0546)

This DB2-based asset collection and physical drawing product will provide the capability to draw physical and logical topologies of system and network complexes. EPCT is a locally developed application written by the ISSC Corporation in C Language and provides browsing an editing capability on-line. This product can be ordered as a PRPQ through the IBM Corporation.

1.5.3. Downstream Network Server Configuration and Inventory Management

The following figure illustrates a downstream view of Network Configuration and Inventory Management.

Figure 9: Downstream Network Server and Inventory Management



Asset management below the server level has not been widely implemented throughout the industry today. WAN environments have their own unique challenges. Most host-based products require an additional layer to bridge beyond the server level. The products listed below are seeing some industry penetration and promise to be viable tools in the coming months ahead.

- **PVCS Configuration Builder Series** (Product of INTERSOLV Corporation)

The PVCS series covers all key functional areas for configuration management:

- Version Management,
- Build Management,
- Release Management, and
- Report Generation.

These functional areas are available across all types of files including source code, text, or documentation files, graphic or binary files. With PVCS Series development teams can:

- Recreate a system, or component of a system at any time and prevent inadvertent errors and code changes with version management.

- Rebuild an entire system when any component is changed without having to remember complete relationships about elements of the system.

- **LANFocus Management / 2** (Product of the IBM Corporation)

This family of products provides System Management principles to LAN attached workstations having OS/2 and DOS installed. The products provide a platform that includes a programming interface for the creation of system management applications. This includes applications that address the disciplines of problem management, performance management, and configuration management.

1.6. Roles and Responsibilities

1.6.1. Inventory Manager

The Inventory Manager is responsible for maintaining the Inventory in a current and accurate state. Role is responsible for both mainframe and network resident devices and software components. The Inventory Manager interfaces with Systems Management disciplines and the Financial Department.

1.6.2. Inventory Clerks

Inventory Clerks are responsible for maintaining the Inventory Data Base Repository and for guarantying the information contained within the Repository is accurate and in a current state. Information is data entered, or entered via automated tools. If automated tools are used, then clerks must be knowledgeable in program products used as a tool.

1.7. Process Evaluation

1.7.1. Present System Weaknesses

A Centralized Repository for asset information does not presently exist. Inventory Management is presently being performed by many various groups (i.e., mainframe, communications, data network, etc.) and a consolidation of these databases into a Centralized Inventory Repository should be planned.

When migrating to a centralized repository, automated tools and interfaces should be developed, so that any acquisition, redeployment, or termination of assets will have to be performed through the automated system. This will reduce the effort presently performed by personnel and guaranty the accuracy of the Inventory repository.

1.7.2. Recommendations for Improvement

Create Centralized Repository of Inventory information.

Utilize Automated Tools and a Front-end to the Inventory Repository.

Integrate the Inventory Repository with the everyday asset functions performed by personnel, such as:

- Asset Acquisition,
- Asset Redeployment,
- Asset Termination,
- Lease and Contract Maintenance,
- Volume Purchase Agreements, etc.

Utilize a “Criticality” indicator to relate assets and their criticality for disaster recovery purposes. This will allow for reports that list all most critical resources for a specific location, by type and costs.

Formulate a committee to investigate methods for improving Inventory Management and implement the most rewarding suggestions from the committee.