

LCSIS®

**Life Cycle Support
Information System**

Application Administrator's Guide

Visible
SYSTEMS CORPORATION

This manual is intended for both the end user and the administrator of the LCSIS tool suite.

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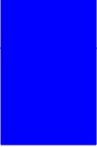
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WELCOME TO VISIBLE LCSIS

VISIBLE LCSIS is a product data management software application developed to support and enhance product design and development, manufacturing, and in-service life cycle support. VISIBLE LCSIS was designed from conception to support sound configuration management principles and associated change control as well as provide rapid recovery and viewing of vaulted digital objects that identify and define configuration items. Through its graphical user interface design, VISIBLE LCSIS has the feel and look of the Windows environment while offering all of the advantages of client/server technology and relational data base architecture.

VISIBLE LCSIS was designed to create product baselines during initial product development and, at the same time, provide a means for the permanent storage of digital data in predefined folders tied to each configuration item created in the design. This unique design approach separates VISIBLE LCSIS from the majority of document management products offered today that are unable to create meaningful relationships between their product structures and their associated documentation. Because of this unique relationship, VISIBLE LCSIS is able to create and modify multiple baseline variants through a product's life cycle and still maintain its relationship to its documentation. As new baselines are added to create a variant of an existing product or modifications are made to existing life cycle baselines, documentation associated with configuration items is carried forward and maintained as revisions to existing documents. New reference documents can be added to enhance each configuration item's library of documents or they can be deleted if they become obsolete.

VISIBLE LCSIS offers users the ability to create four basic product baselines that are both relevant and meaningful during a product's life cycle. These baselines, defined by the Configuration Management Institute of America in conjunction with the University of Arizona are: 1) the Bill of Material (BOM); 2) the As-Planned; 3) the As-Built; and 4) the As-Modified. Each baseline is extremely important because they each establish benchmarks in a product's life cycle that are used to coordinate such activities as long lead time procurements; baseline documentation requirements; defining the product to be built, and tracking the deployed product to support both out-year product liability issues and product upgrades.



VISIBLE LCSIS incorporates the advantages of client/server technology and relational database architecture in that it allows multiple users to access data simultaneously without affecting performance. Additionally, VISIBLE LCSIS provides full system metrics for every action initiated by an authorized user. By simply defining a given period of performance, the system administrator can generate a summary of all actions undertaken for a particular time period. VISIBLE LCSIS also monitors all action undertaken by the system administrator by automatically notifying each individual program manager, with a warning message, of every change action to the database that is initiated to his product by the system administrator. In essence VISIBLE LCSIS is on guard twenty-four hours a day.

Preface

VISIBLE LCSIS is a dynamic application that unites a set of data and process management tools into an integrated product data management system that supports ISO 9000 quality standards. VISIBLE LCSIS optimizes a company's ability to manage its concurrent product development environment by providing advanced configuration management, links to non-technical support areas, workflow management, and flexible viewer interfaces.

This guidebook focuses on the VISIBLE LCSIS administrator. The intent is to provide useful guidelines about the VISIBLE LCSIS application, to provide procedures for VISIBLE LCSIS system administration, and to provide appropriate references to specific procedures already covered in existing documentation. The guidebook begins with a discussion of how VISIBLE LCSIS works, explains how the application is installed, provides references for database maintenance, and provides procedures that will help the application administrator help VISIBLE LCSIS users. In addition, we provide guidelines for producing standard and ad hoc reports and discuss special features of VISIBLE LCSIS that may be of interest to the application administrator. Finally, technical support information is provided.



1 ...*How VISIBLE LCSIS Works*

The VISIBLE LCSIS product data management application is the point of entry for a set of integrated computer programs designed for manufacturing firms that have complex data management requirements, in-house systems administration, and network resources. The VISIBLE LCSIS application assumes a familiarity with Windows workspaces and the User's Guide and this Administrator's Guide may be used in concert with appropriate Windows User Guides to achieve maximum functionality and benefits. In order to provide experienced Windows users with an intuitively familiar workspace, VISIBLE LCSIS generally conforms to the guidelines contained in *The Windows Interface Guidelines for Software Design*.

VISIBLE LCSIS unites a set of data and process management tools into an integrated product data management system that supports ISO 9000 quality standards. VISIBLE LCSIS optimizes a company's ability to manage its concurrent product development environment by providing advanced configuration management, links to non-technical support areas, and workflow management. VISIBLE LCSIS uses a graphical user interface (GUI) to create an environment that is easy to learn and easy to operate. Users launch VISIBLE LCSIS by clicking on an icon at their own workstation; integration with other applications is transparent to the user.

VISIBLE LCSIS is used within an enterprise to organize, access, and control all data related to its products and to manage the life cycle of those products. To accomplish this, VISIBLE LCSIS accommodates administrators, end-users that create or modify product information, non-technical support personnel, and program managers. Through the Data Repository Module, the data vaults complement and support configuration management requirements by linking data files and product documentation to the product's configuration for total document management and version control. VISIBLE LCSIS is a proactive step toward ISO 9000 compliance. VISIBLE LCSIS promotes on-line workflow management through its Project Management Module. Workflow allows users to monitor and repeat successful processes. This enables managers to optimize resource utilization through reliable performance tracking. The VISIBLE LCSIS Master Configuration Module allows users to access family trees that display data for existing products. Product line variants are supported through As-Modified Baselines and uniquely serialized component tracking. The Life Cycle Module performs change control functions. VISIBLE LCSIS provides users with the capability to compile and print useful reports that reflect the prod-

uct and its status. Users have fast access to meaningful change control and status accounting information.

Data Repository Module

VISIBLE LCSIS is unique because it responds to configuration management requirements by providing total document management and version control. The three VISIBLE LCSIS vaults, which are similar in architecture and operation, are designed to provide storage of, and controlled access to, the following categories of data:

- *PRODUCT DATA* - Product-related documents (such as engineering drawings) that are required by a large number of users to perform assigned product data management tasks.
- *GENERAL DATA* - Common interest documents (such as industry standards or forms) that have wide applicability to an organization.
- *USER DATA* - Any document of particular interest to the user (such as personal memoranda, schedules) to which the user may grant others access on a case-by-case basis.

The principle underlying the architecture of the product and general vaults is that the maximum number of users are provided viewing access to product-related and common interest documents, while check-out privileges are granted only to those actually authorized to make changes to those documents. VISIBLE LCSIS allows selected users to check-out, or change (check-in) data sets, documents, and other product information, and maintains multiple releases and user authorizations. This critical function is based on what each user is authorized to do within the system; once the user is cleared by the system, the system will perform the check-in/out action as requested.

Check-in occurs when a product design is created, modified, or promoted and is placed under VISIBLE LCSIS control. When a product data element is checked in, full security, access control, and change control will be effective. When a product element is modified and the modification is approved, it will be checked in as a newly released revision. Check-out occurs when controlled product information is required by a user to use without change, to modify or change, to view, or to red-line, markup, or comment that product information item. During check-outs, the vault locks the original information to prevent users from changing or modifying the data simultaneously.

Project Manager Module

The VISIBLE LCSIS workflow function provides users with tools to define and implement change processes and workflows based on site-defined rules. Workflow provides

VISIBLE LCSIS users with a flexible set of tools for handling projects ranging from structured, high-volume, transaction-based processes that are relatively static in nature to individualized, ad-hoc processes that evolve from small, dynamic workgroups. VISIBLE LCSIS notification utilities automatically notify approvers of the need for their action. With the capabilities to identify, quantify, and repeat procedures, workflow provides a company with a path for continuous improvement.

Master Configuration Module

The Master Configuration Module provides the tools to develop, manipulate, and view the structure of any product logically. This module generates the three document sets critical to developing, tracking, and updating, a product's data throughout its life cycle: bills of material (BOM), configuration baselines, and family trees. Configuration identification functions performed and controlled by this module include:

- As-planned, as-built, as-modified configurations,
- Maintenance history and revision tracking,
- Authorized manufacturer/supplier list,
- Serialized part tracking/effectivity by serial and date, and
- Baseline comparison.

VISIBLE LCSIS allows users to create new structure elements for newly designed parts and assemblies, to create or delete a version, effectivity condition, substitute, or option for a part or assembly, and to browse up and down the product structure to find specific assemblies or parts. Different users view BOMs, product configurations, and part lists structures differently. To consider the impact of a proposed change to one part, a reviewer might use the product structure to find the other parts of the assembly to evaluate the effects of the change on those parts (used-on) and to find the other assemblies in which the part is used to evaluate the effect of the change on them (where-used). VISIBLE LCSIS provides as-designed configurations for those users interested in viewing a functional hierarchical list. VISIBLE LCSIS also provides as-built configurations for users who need to view the structure to see assembly information and relationships.

Life Cycle Module

Change control functions built into the Life Cycle module maintain secure control of documentation, allowing management to make informed decisions and allowing a company to respond effectively to circumstances leading to changes, improvements, and problem cor-

rection in product lines. Improvements may be as simple as replacing an unreliable part, or as complex as redesigning an entire product line. Products may be tailored to support a customer-defined specification for an existing product or introduce a totally new product. Approved change requests update affected product baselines simultaneously to enhance change/improvement response cycles.

Viewer Translator Module

VISIBLE LCSIS is bundled with a universal document viewer that allows enterprise-wide viewing and markup. The user can view more than 150 file formats created from a multitude of software packages and scanning devices. Multiple documents can be viewed simultaneously in moveable windows; the viewer offers the user the capability to create, overlay, and redline files to allow data related to design changes to be relayed with the original documents.

Software Upgrades

VISIBLE LCSIS was developed to run with a relational database. Upgrading the database system may affect VISIBLE LCSIS functionality. Please contact the VISIBLE LCSIS developer prior to upgrading your respective database.

Database Operations and Maintenance

Database management is the responsibility of an administrator who has had training on that system. Database operations and maintenance, at a minimum, should consider the following functions: backup and recovery, user administration, monitoring the health of the database, controlling data updates, dealing with problems, and providing guidance to users.

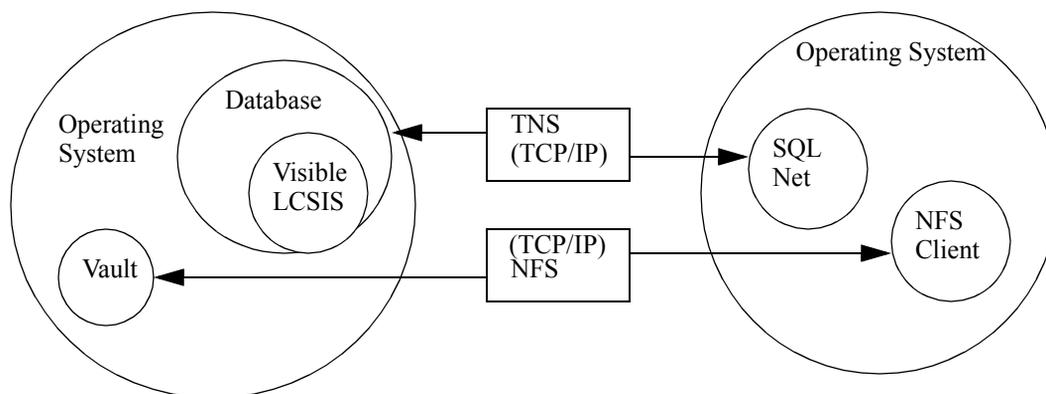
Books from third party publishers can be useful guides to performing these functions. For example, ORACLE backup and recovery functions, consult the *ORACLE Backup and Recovery Handbook* by Rama Velpuri. To customize ORACLE and to fine tune it for performance and productivity, see *Tuning ORACLE* by Michael Corey, Michael Abbey, and Daniel Dechichio, Jr. Both books were published by ORACLE PRESS at Osborne McGraw-Hill, 2600 Tenth Street, Berkeley, CA 94710.

VISIBLE LCSIS Application Installation

VISIBLE LCSIS is installed, configured, and tested by the developer's implementation team. Installation will create a directory (VISIBLE LCSIS) that contains the executable code (LCSIS.exe) and the required support files. Implementation and system requirements are covered in more detail in the *VISIBLE LCSIS User Guide*, chapter 2.

The complete VISIBLE LCSIS installation includes a database program, a vault management program, a multiformat viewer, and a networking software package in addition to the visible LCSIS application. Once the client and server applications have been loaded, VISIBLE LCSIS appears as a single program to the user.

VISIBLE LCSIS operates on a PC Client running Windows configured and running TCP/IP software. VISIBLE LCSIS is supported by MS SQL/Server installed on a Pentium server with Windows NT/2000/XP OS using TCP/IP protocols. VISIBLE LCSIS uses Myriad as its multi-format viewer.



Server Components:
Operating System - Microsoft Windows NT/2000/XP

Client Components:
Operating System - Microsoft Windows
/ TCP/IP networking

VISIBLE LCSIS System Architecture

2*Supporting VISIBLE LCSIS Users*

Logging In

Logging in is illustrated in more detail in the *VISIBLE LCSIS User Guide*, chapter 3. Two levels of startup security and access control are provided in VISIBLE LCSIS:

- *Client-Server Connectivity* -- Established during startup of the client, this requires a password assigned by the Network Administrator in accordance with previously established procedures.
- *VISIBLE LCSIS Application and Database Access* -- Established upon startup of VISIBLE LCSIS, this requires a password initially assigned by the VISIBLE LCSIS Application Administrator. Users will be granted access to VISIBLE LCSIS modules based on functional roles and/or task assignments as authorized by the Application Administrator.

Changing Passwords

Passwords (maximum 10 characters) are initially assigned by the Application Administrator, but may be changed by an authorized user during any login process.

Maximum Number of Users

If the maximum number of seats authorized for an installed system are already on line, an informational message box will appear listing all active users and the times of their logins. An authorized user may be logged in concurrently at more than one location. To increase the maximum number of VISIBLE LCSIS users on the system, call Technical Support (see “Technical Support and Maintenance Agreement” on page 53).

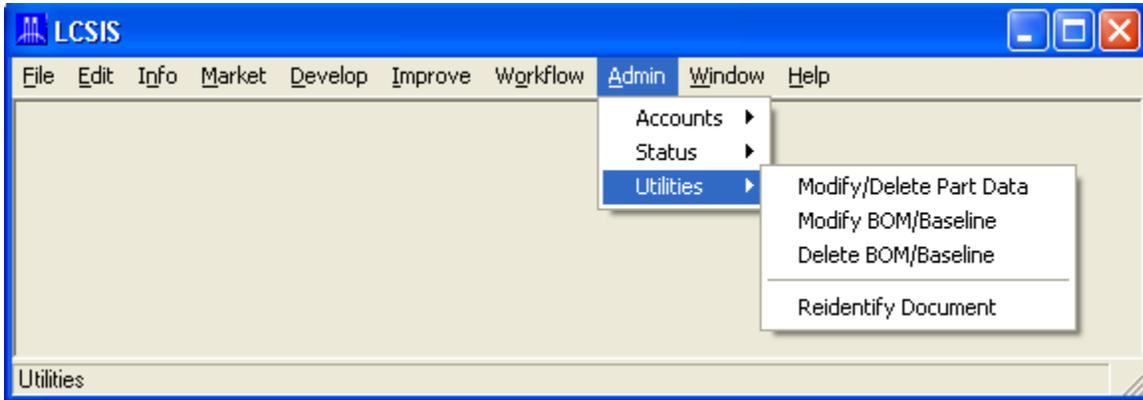
3 *VISIBLE LCSIS Application Administration*

These guidelines provide a description of the screens that comprise one of the VISIBLE LCSIS application's principal features, the System Administration module, along with detailed instructions for their use. Because the reliability of the product data and process management tools incorporated in the application and the fidelity of the information stored in the VISIBLE LCSIS database are only as secure as the protection provided to both of these functions, it is recommended that distribution of this document be limited to a minimum as determined by the designated Application Administrator.

The System Administration (*Admin*) module is the primary VISIBLE LCSIS interface for establishing the identities and access privileges of the individual users of the application, as well as for establishing their relationships. It also provides utility functions for administrative editing of data entered into the VISIBLE LCSIS database, ranging from the correction of simple typographical errors to the deletion of entire baselines.

Admin Drop-down Menu

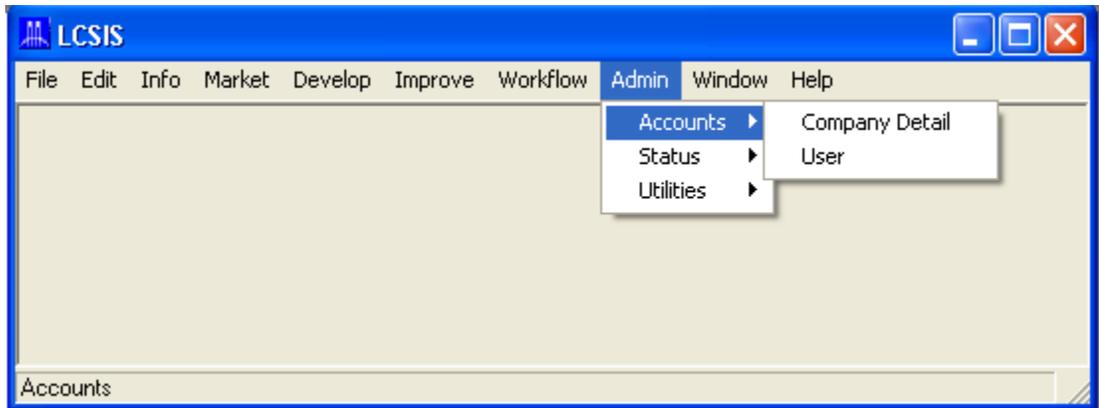
The options available in the *Admin* drop-down menu are illustrated in the next figure.



Admin Drop-down Menu

Accounts

Clicking on *Accounts* in the *Admin* drop-down menu provides the Application Administrator access to a set of screens used to establish individual user accounts and to establish relationships among those users. The options available in the *Accounts* submenu are illustrated in the following figure.



Admin Drop-down Menu with Accounts Submenu Displayed

Company Detail

Clicking on Company Detail in the Accounts submenu of the Admin drop-down menu accesses a screen (illustrated in the following figure) that is used to enter own company information into the VISIBLE LCSIS database.

Company Name: MCLAUGHLIN RESEARCH CORPORATION

Address: 132 JOHNNY CAKE HILL ROAD

City: MIDDLETOWN

State: RHODE ISLAND **Zip Code:** 02842

Country: USA

Telephone: (401) 849-4010 **Fax:** (401) 846-2210

CAGE: MRC

E-Mail: LCSIS@MRCDS.COM

Website: MRCDS.COM

Comments: DEVELOPERS OF MRC'S LIFE CYCLE SUPPORT INFORMATION SYSTEM (LCSIS)

Company Detail Screen

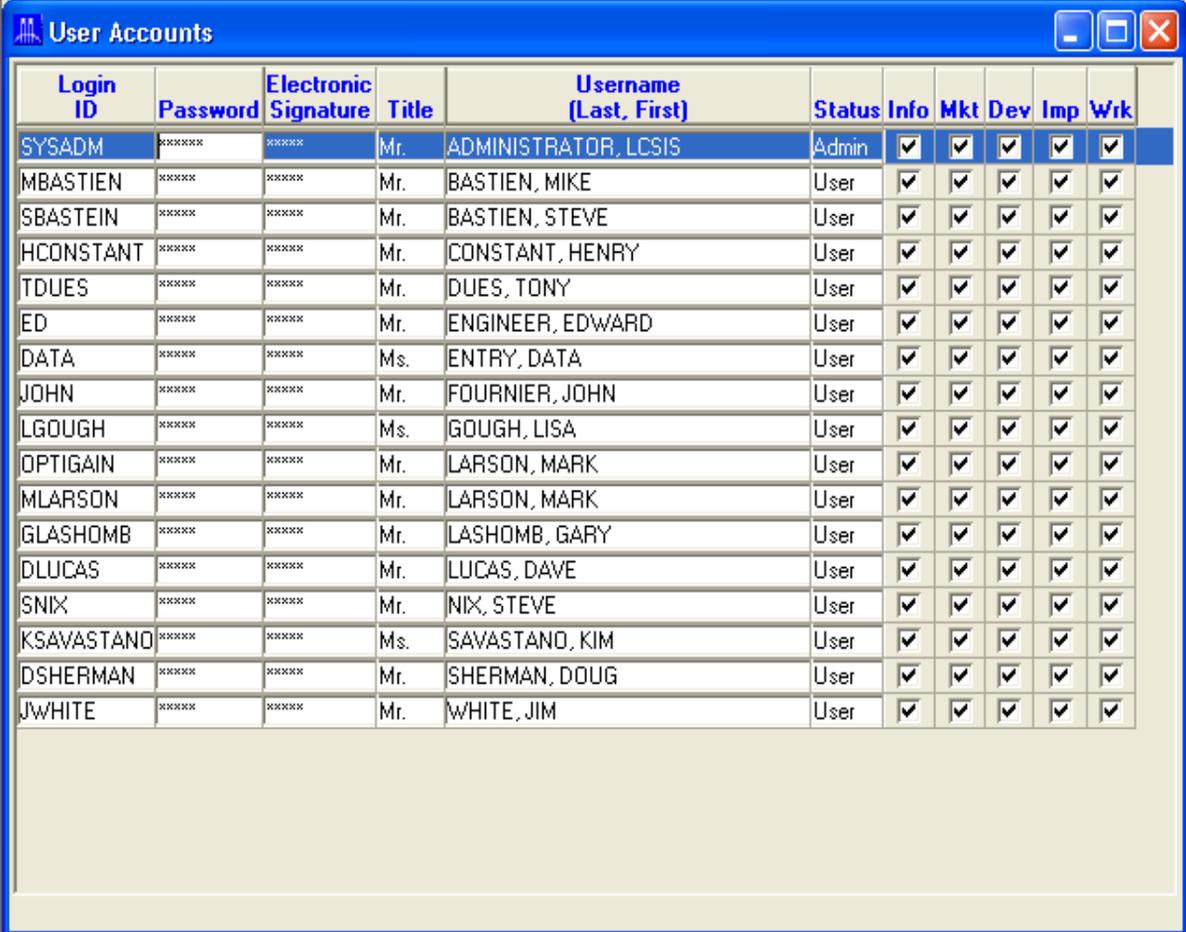


NOTE: The CAGE (Commercial and Government Entity) Code is a unique five-character company identification number issued by the Defense Logistic Agency (DLA) to identify Department of Defense contractors. Together, a part number and CAGE code comprise a unique identifier for every assembly and part, including the Top Assembly, within VISIBLE LCSIS. It is mandatory that every part number have a corresponding CAGE code. If your company does not have a DLA-assigned CAGE code, this field must contain a company-unique identifier prior to the creation of a BOM or baseline. The code recorded in the *Company Detail* screen will automatically be entered for every part/assembly designated *Build* (vice *Buy*) during data entry.)

User Accounts

The *User Accounts* screen, an example of which is shown in the next figure, is used to enter/display information concerning all authorized users of the VISIBLE LCSIS applica-

tion. It is accessed by clicking on User in the Accounts submenu of the Admin drop-down menu.



Login ID	Password	Electronic Signature	Title	Username (Last, First)	Status	Info	Mkt	Dev	Imp	Wrk
SYSADM	*****	*****	Mr.	ADMINISTRATOR, LCSIS	Admin	<input checked="" type="checkbox"/>				
MBASTIEN	*****	*****	Mr.	BASTIEN, MIKE	User	<input checked="" type="checkbox"/>				
SBASTEIN	*****	*****	Mr.	BASTIEN, STEVE	User	<input checked="" type="checkbox"/>				
HCONSTANT	*****	*****	Mr.	CONSTANT, HENRY	User	<input checked="" type="checkbox"/>				
TDUES	*****	*****	Mr.	DUES, TONY	User	<input checked="" type="checkbox"/>				
ED	*****	*****	Mr.	ENGINEER, EDWARD	User	<input checked="" type="checkbox"/>				
DATA	*****	*****	Ms.	ENTRY, DATA	User	<input checked="" type="checkbox"/>				
JOHN	*****	*****	Mr.	FOURNIER, JOHN	User	<input checked="" type="checkbox"/>				
LGOUGH	*****	*****	Ms.	GOUGH, LISA	User	<input checked="" type="checkbox"/>				
OPTIGAIN	*****	*****	Mr.	LARSON, MARK	User	<input checked="" type="checkbox"/>				
MLARSON	*****	*****	Mr.	LARSON, MARK	User	<input checked="" type="checkbox"/>				
GLASHOMB	*****	*****	Mr.	LASHOMB, GARY	User	<input checked="" type="checkbox"/>				
DLUCAS	*****	*****	Mr.	LUCAS, DAVE	User	<input checked="" type="checkbox"/>				
SNIX	*****	*****	Mr.	NIX, STEVE	User	<input checked="" type="checkbox"/>				
KSAVASTAND	*****	*****	Ms.	SAVASTAND, KIM	User	<input checked="" type="checkbox"/>				
DSHERMAN	*****	*****	Mr.	SHERMAN, DOUG	User	<input checked="" type="checkbox"/>				
JWHITE	*****	*****	Mr.	WHITE, JIM	User	<input checked="" type="checkbox"/>				

User Accounts Screen

Screen Description



This screen is divided into two major sections. On the left (*User Data*) side of the screen are listed the login identification, password, name, and status of each authorized user. On the right (*Permissions*) side of the screen are check boxes indicating to which of the VISIBLE LCSIS modules each individual has been

granted access. The order of information on this screen may be rearranged by clicking on the *Sort* toolbar button and selecting the criteria for the sort, e.g., sorting by *Username* will list all authorized users in ascending alphabetical order, as shown in the preceding figure.



NOTE: The Application Administrator is the only user authorized access to the *Administration* module, therefore, that option is not listed in the *Permissions* section of the screen.

Establishing User Accounts

To establish a new user account, the Application Administrator first clicks on *Insert User* in the *Edit* drop-down menu to open a line of *User Data* text/ drop-down list boxes and *Permissions* check boxes for assigning a unique set of credentials and privileges to that user.

- **Login ID** -- Type in user-unique **identifier**. This may be any set of up to 10 alphabetical, numerical, alphanumeric, or keyboard characters. Examples include first name, last name, employee number, personal alias, etc.
- **Password** -- Type in user-unique **countersign** (i.e., personal identifier, or PID). This may be any set of up to 10 alphabetical, numerical, alphanumeric, or keyboard characters, assigned in accordance with company management information system security policies.



NOTE: As an additional security measure, passwords are not displayed on this screen since the VISIBLE LCSIS *Login* dialog box allows the user to change his/her own password at any time. Should the Application Administrator find it necessary to change a user's password, he/she should type in the replacement **password** in the text box next to the user's Login ID. That new password will remain valid until changed by the user or the Application Administrator.

- **☛ Username** -- Enter gender of user by clicking on appropriate choice in the drop-down list box, and then type in the actual **name** of the user, entering the last name first to facilitate alphabetical sorting of names in VISIBLE LCSIS windows.



NOTE: Upon installation, the initial account established will be for the Application Administrator under the gender-neutral username of “Administrator, VISIBLE LCSIS.” For purposes of illustration, this manual shows similarly formatted usernames, e.g., “Manager, Product,” but this method of aliasing is discouraged insofar as it can seriously degrade quality system record-keeping efforts, such as those required by ISO 9000.

- **Status** -- Upon installation of VISIBLE LCSIS, an Application Administrator will be designated, who will be the only user to have access to the System Administration (*Admin*) module. All other authorized VISIBLE LCSIS users will be assigned the status of *User* automatically.



Once an individual user account has been established, the Application Administrator assigns that user access privileges to the desired modules by clicking on the corresponding check boxes in the *Permissions* section of the screen. Clicking on the *Save* toolbar button completes the process and saves the data to the VISIBLE LCSIS database.

Deleting User Accounts

To delete a user account, the Application Administrator first selects the user to be deleted on the *User Accounts* screen and then clicks on *Delete User* in the *Edit* drop-down menu. A query dialog box will appear requesting confirmation of the deletion. Clicking on the *Yes* command button will delete the user.



NOTE: If the user is involved in any workgroup/workflow activities or is the owner of any vaulted documents, he/she cannot be deleted until all such actions/data have been reassigned. An information message similar to that shown in the next figure will apprise the Application Administrator of this situation.



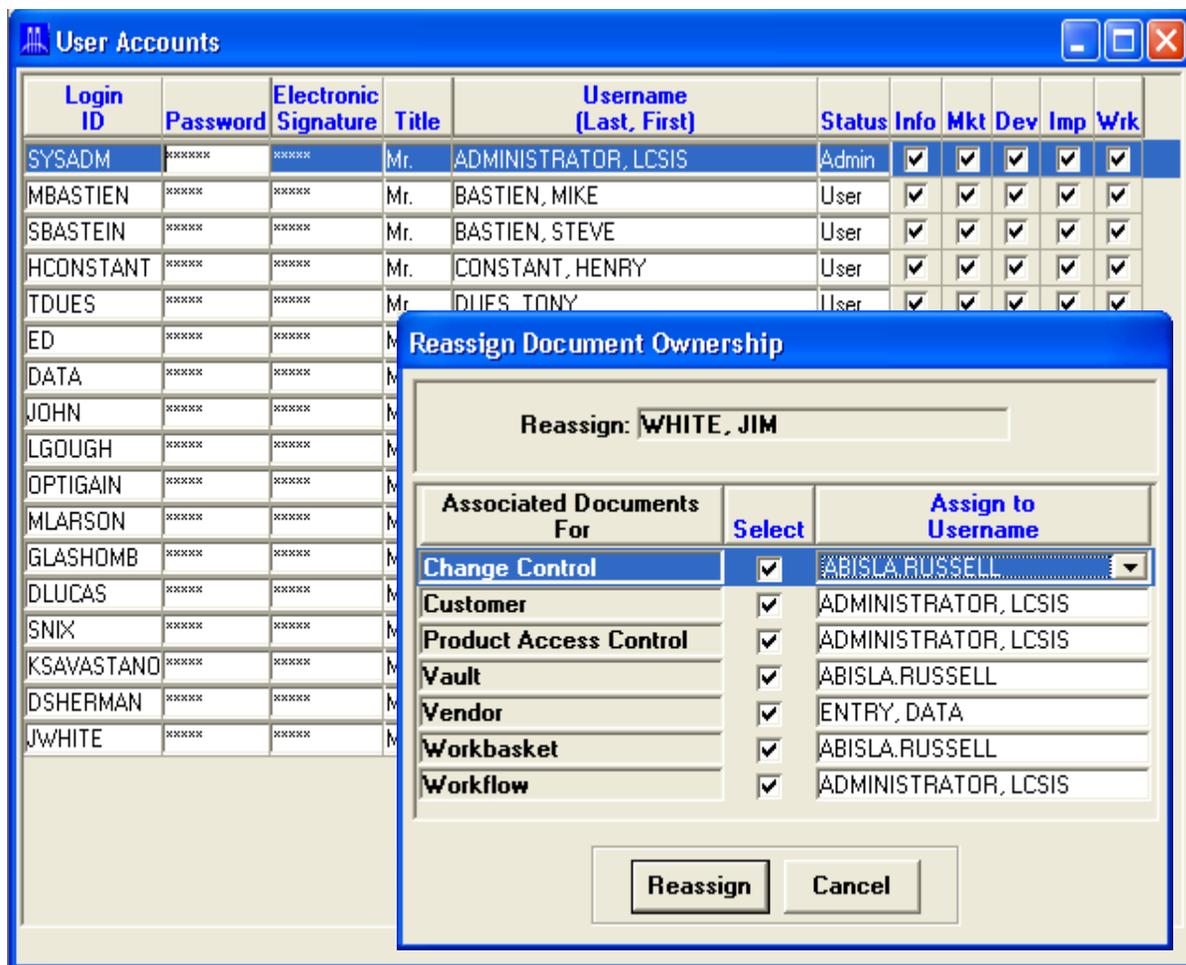
Delete User Status Information Message Box

Reassigning Document Ownership

To reassign ownership of a set of documents to another or several other authorized VISIBLE LCSIS users, click on *Reassign Document Ownership* in the *Edit* drop-down menu, which will cause a dialog box similar to that shown in the next figure to appear.



NOTE: This utility accommodates transfer of document ownership within a specific documentation category (e.g., those that currently are part of an open process within the Product Improvement module) belonging to a user who is no longer part of the organization, e.g., reassignment, termination, etc., or who will be absent for an extended period of time, e.g., vacation, illness, travel, etc.



User Accounts Screen with Reassign Document Ownership Dialog Box Cascaded

A text box in the upper portion of the dialog box displays the username selected in the *User Account* screen, i.e., the current owner of the documents to be reassigned. The center section contains a list of the four categories of documentation subject to reassignment:

- *Change Control* -- Trouble report or change request documents, including deviation and waiver requests, involved in a review process currently in progress within the Improvement module.
- *Vault* -- Documents residing in any of the three VISIBLE LCSIS Data Vaults.

- *Workbasket* -- Documents currently in the user's Workbasket.
- *Workflow* -- Documents involved in a review process currently in progress within the Workflow module.

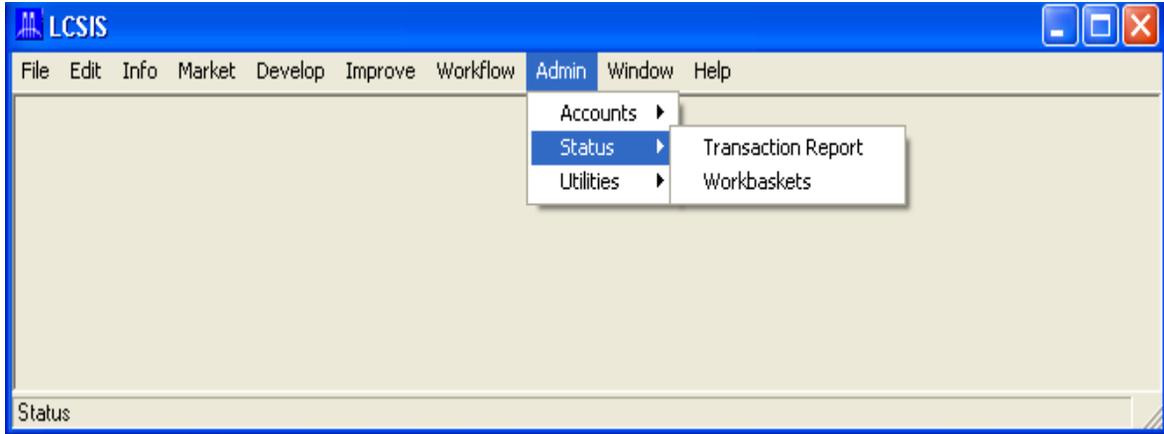
To transfer ownership of all the selected user's documents within any one of these four categories, click on the check box adjacent to the category, and then click on the username of the new owner in the *Assign to Username* drop-down list box to the right of that check box. Complete the reassignment process by clicking on the *Reassign* command button in the dialog box.



NOTE: A different new owner may be designated for documents in each of the categories selected.

Status

Clicking on *Status* in the *Admin* drop-down menu provides the Application Administrator access to a set of screens used to display the present status of baseline and document transactions and the current location and status of Workbasket-transmitted actions. The options available in the *Status* submenu are illustrated in the following figure.



Admin Drop-down Menu with Status Submenu Displayed

Transaction Reports

VISIBLE LCSIS is capable of generating a listing of all baseline and document transactions that have occurred within a user-specified timeframe, systematically arranged in a report format. Clicking on *Transaction Report* in the *Status* submenu of the *Admin* drop-down menu accesses a *Preview - Transaction Report* screen, an example of which is illustrated in the next figure.

Preview - Transaction Report

Start Date: 02/19/1997 End Date: 02/19/1999

Preview Cancel

MCLAUGHLIN RESEARCH CORPORATION

Transaction Report

Date: 02/19/2004 From 2/19/1997 to 2/19/1999

Run By: ADMINISTRATOR, LCSIS

Baseline Transactions

--Transaction-- Date	Code	Product Line	Model	Top Assembly	Config. ID	Type	En D
07/07/1998 00:00	ADD	TRAINING PRODUCTS	CBT WORKSTAT	CBTW	N/A	As Planned	07/07
07/07/1998 00:00	ADD	TRAINING PRODUCTS	CBT WORKSTAT	CBTW	N/A	As Planned	07/07
07/07/1998 00:00	DELETE	TRAINING PRODUCTS	CBT WORKSTAT	CBTW	CBTW	BOM	07/07
09/16/1998 00:00	ADD	TRAINING PRODUCTS	CBT WORKSTAT	CBTW	N/A	As Planned	09/16
09/16/1998 00:00	ADD	TRAINING PRODUCTS	CBT WORKSTAT	CBTW	SEPTEMBER 16	As Built	09/16
09/16/1998 00:00	ADD	TRAINING PRODUCTS	CBT WORKSTAT	CBTW	SEPTEMBER 16	As Modified	09/16
09/16/1998 00:00	ADD	TRAINING PRODUCTS	CBT SERVER	CBTS	N/A	As Planned	09/16
09/16/1998 00:00	DELETE	TRAINING PRODUCTS	CBT WORKSTAT	CBTW	CBTW	As Planned	09/16

Document Transactions

--Transaction-- Date	Code	Document Number	Type	Title	Status	Enter Date	En D
-------------------------	------	--------------------	------	-------	--------	---------------	---------

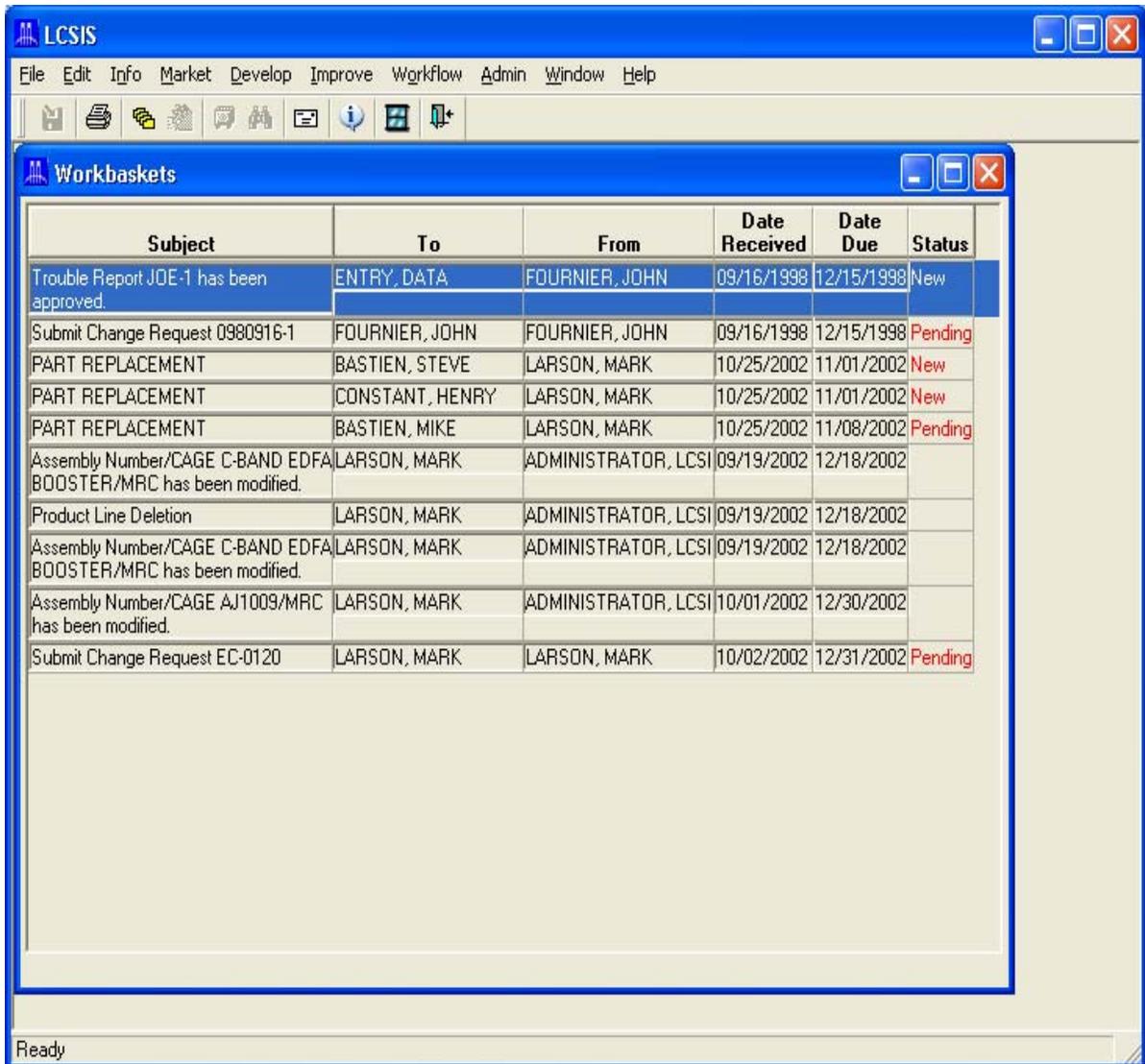
Preview - Transaction Report Screen



The top portion of this screen contains text boxes for entering the start and end dates for the desired report. After these dates have been entered, clicking on the *Preview* command button displays information concerning every baseline and document transaction that took place during the specified period in the lower portion of the screen. This information may be viewed on screen using the vertical and/or horizontal scroll bars/arrows, or may be printed by clicking on the *Print* toolbar button or clicking on *Print* in the *File* drop-down menu.

Workbaskets

VISIBLE LCSIS is capable of generating a tabular listing of all current Workbasket activity by location and Clicking on *Workbaskets* in the *Status* submenu of the *Admin* drop-down menu accesses a *Workbaskets* screen similar to that shown in the following figure.



Workbaskets (Status) Screen

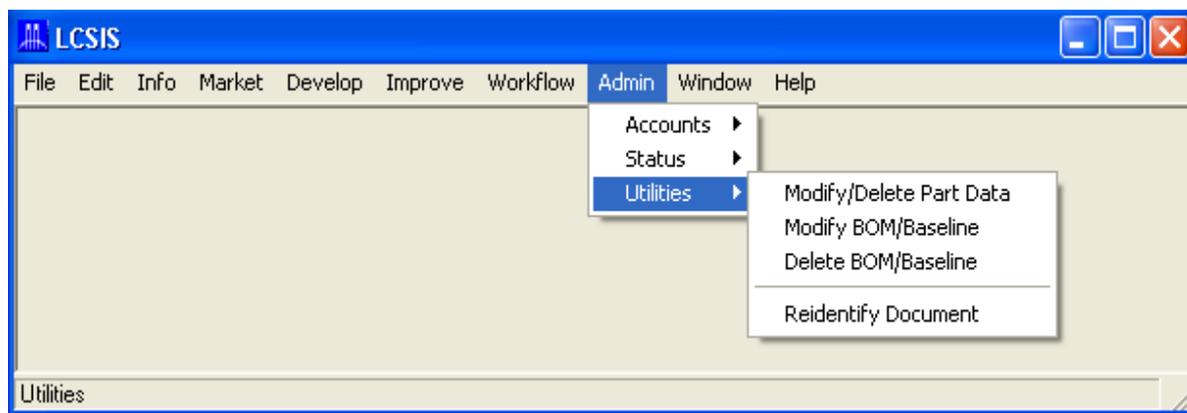


This screen shows the subject, originator, and addressee of every open Workbasket action, as well as the date the message was received, the date a reply/

action is due, and the status of the message in the Workbasket of the addressee. The order of information in this table may be rearranged using the *Sort* toolbar button.

Utilities

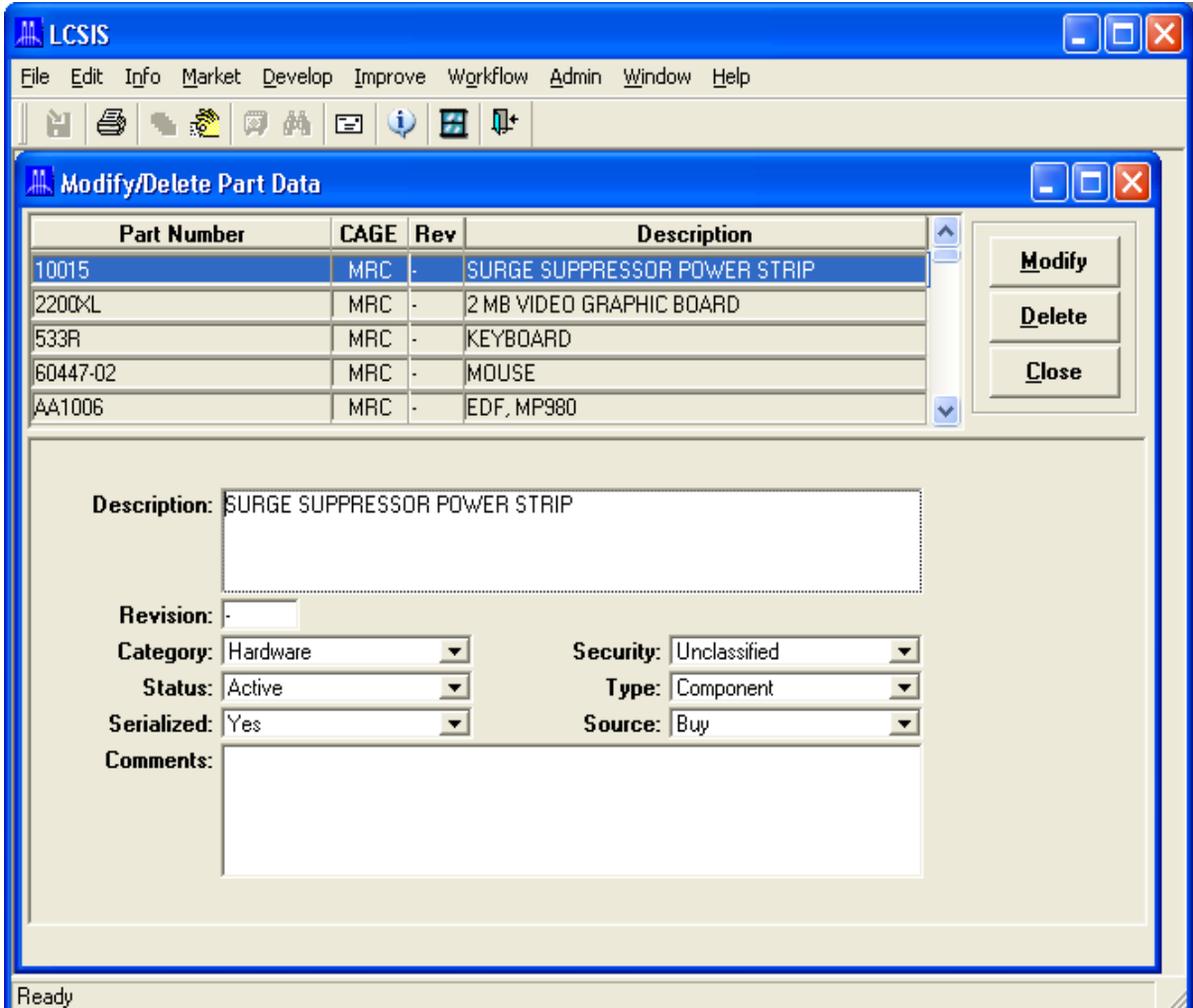
Clicking on *Utilities* in the *Admin* drop-down menu provides the Application Administrator access to a set of screens used to correct information in the VISIBLE LCSIS database, e.g., data entry typographical errors, omissions, etc., without having to go through the change control process. The options available in the *Utilities* submenu are illustrated in the following figure.



Admin Drop-down Menu with Utilities Submenu Displayed

Modify Part Data

The *Modify Part Data* screen allows the Application Administrator to correct part details in the VISIBLE LCSIS database without having to invoke the change control process. This utility averts the necessity for creating change processes/documents merely to correct errors made during creation of a BOM/baseline, e.g., incorrectly entered category, type, and source (including manufacturer CAGE code) information, as well as to add comments concerning the part. Clicking on *Modify Part Data* in the *Utilities* submenu of the *Admin* drop-down menu will open a screen similar to that depicted in the next figure.



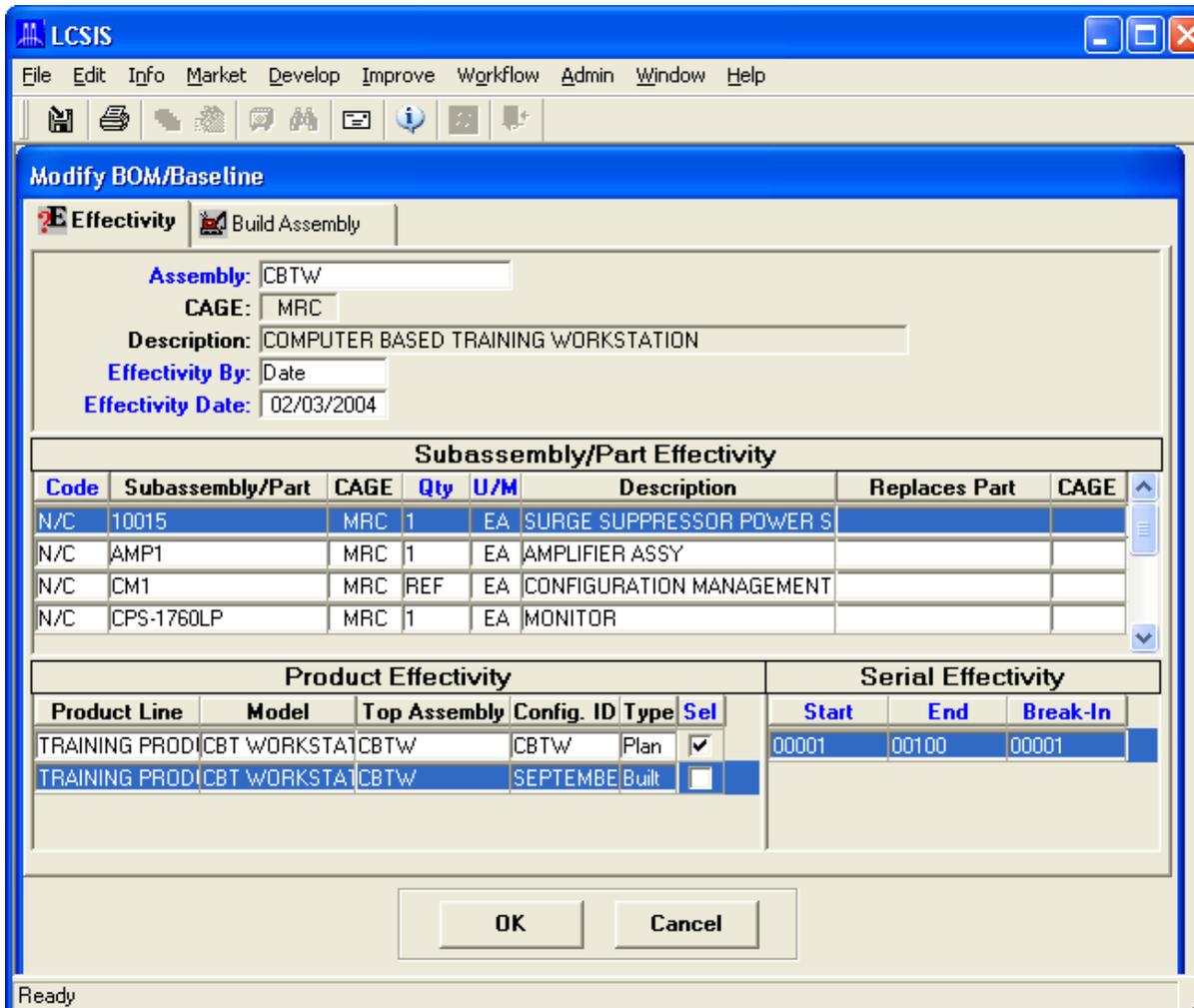
Modify Part Data Screen

To change any detail describing the selected part number, type in the correct information (e.g., *Description*, *Revision*, *Comments*) or click on the drop-down list box for the detail and select an alternative value. When finished, click on the *Modify* command button to save the changes to the VISIBLE LCSIS database. VISIBLE LCSIS will automatically update the *Parts Catalog* screen and will notify Product Managers of the changes via their respective Workbaskets.

Modify BOM/Baseline

The *Modify BOM/Baseline* screen allows the Application Administrator to correct information in an existing BOM/baseline without having to invoke the change control process. This utility averts the necessity for creating change processes/documents merely to correct data errors introduced during creation of a BOM/baseline, e.g., incorrect identification or omission of an assembly/part, entry of incorrect units of measure or quantities within a given assembly, etc.

Clicking on *Modify BOM/Baseline* in the *Utilities* submenu of the *Admin* drop-down menu will open the *Modify BOM/Baseline* screen with page tabs, an example of which is shown in the next figure with the *Effectivity* tab page displayed.



Modify BOM/Baseline Screen with Effectivity Tab Page Displayed

Effectivity

The upper portion of the *Effectivity* tab page on the *Modify BOM/Baseline* screen contains a drop-down list box for selecting the part number of the next higher assembly (NHA) containing the item(s) to be modified, a text box showing the item's CAGE code, and a static text field displaying the NHA's description. Text boxes also are provided for design-

nating the effectivity parameter (date or serial number) and the date (current unless otherwise specified) for any As Built baselines being changed.



NOTE: Since the purpose of this utility is to administratively modify incorrect data already under configuration control rather than to change that data as the result of an approved change control process, this tab page differs from that used in the Product Improvement module in that this *Effectivity* tab page does not contain a section referencing any documentation governing the change, precisely because there will not be any. For this reason, users should exercise caution when making changes to derivative (As Built) baselines in the *Modify BOM/Baseline* screen, since those derivative baselines may differ from their parent (As Planned) baselines without any reference to the reason for the variances.

The remainder of the *Effectivity* tab page is divided into the following sections:

- *Subassembly/Part Effectivity* -- Used to identify any subassemblies and/or parts that would be added, deleted, or modified by the correction.
- *Product Effectivity* -- Used to designate all baselines (and BOMs for which baselines have not been created) in which the correction is to be made.
- *Serial Effectivity* -- Used to designate the range of serialized assemblies affected by the correction and the first serial (break-in point) affected.

Upon accessing the *Effectivity* tab page, click on the part number of the NHA to be modified in the drop-down list box in the upper portion of the screen. VISIBLE LCSIS will automatically insert the NHA's description in the text box provided. If As Built baselines are to be modified, click on *Date* or *Serial Number* in the **Effectivity By** drop-down list box, as desired. If the current date is appropriate, proceed to the lower portions of the tab page to enter the necessary changes and to designate the affected baselines; if not, type in a new **date** in the **Effectivity Date** text box before proceeding.

To add a new part, click on *Insert Part Effectivity* in the **Edit** drop-down menu. VISIBLE LCSIS will automatically insert *Add* in the **Code** column of the new line and will display a drop-down list box containing the part numbers of all part numbers in the VISIBLE LCSIS database. After selecting a part number in the drop-down list (at which point VISIBLE LCSIS will automatically insert the name of the part in the *Description* column), type in the **quantity** and **unit of measurement** in the **Qty** and **U/M** columns, respectively.



NOTE: If the part number being added to this subassembly is not in the VISIBLE LCSIS database, it will be necessary to define the new subassembly/part before proceeding by clicking on the *Build Assembly* tab. See below for a full description of the *Build Assembly* tab page (see figure 'Modify BOM/Baseline Screen with Effectivity Tab Page Displayed' on page 30) and instructions for its use.

To delete a part, select *Del(ete)* in the **Code** column next to the subassembly/part number. If the deleted part is to be replaced, click on the **Code** column again, but this time select *Add*. VISIBLE LCSIS will open a new line for entering replacement part data and will automatically insert the part number of the deleted part in the *Replaces Part* column.



NOTE: The replacement part also may be entered by clicking on *Insert Part Effectivity* in the **Edit** drop-down menu (see above), but the user must type in the **part number** of the replaced part manually.

To change the quantity or unit of issue, click on *Mod(ify)* in the **Code** column next to the affected subassembly/part number and type in the new **quantity** and/or **unit of measurement** in the **Qty** and **U/M** columns.

The lower left corner of the *Effectivity* tab page will display all baselines (and BOMs for which baselines have not been created) in which the assembly/part occurs. Click on the checkbox next to each baseline affected by the correction.



NOTE: In all cases, the As Planned baseline (or BOM, if no baseline has been created) must be selected.

The lower right corner of the *Effectivity* tab page will display all serial ranges assigned to the baseline highlighted. The user may indicate the range of serial numbers to be affected in one of two ways. If the correction is required starting with a serial number in a displayed range, type that **serial number** in the *Break-In* column for that range. If the correction will affect only a portion of that range, even if only one unit, click on *Insert Serial Effectivity* in the **Edit** drop-down menu, and then type in the start, end, and break-in serial numbers in the respective text boxes provided. In this case the start and break-in numbers should be the same. To delete serial ranges in the specified baseline that will not be

affected by the correction, click on (highlight) the serial range and then click on *Delete Serial Effectivity* in the *Edit* drop-down menu. A warning dialog box will appear requesting the user to confirm the deletion before proceeding.

Build Assembly

The *Build Assembly* tab page permits definition of a new or replacement subassembly not in the VISIBLE LCSIS database.



NOTE: Allowing the user to define an assembly within the processes of this utility is intended to permit correction of an administrative omissions that occurred during baseline creation, rather than to circumvent the change control process provided in the Product Improvement module. Any modifications made through this tab page will not be documented.

If the modification is to add a new or a replacement subassembly/part that was not in the VISIBLE LCSIS database, the new item must be defined before proceeding. To accomplish this the user should begin by clicking on the *Build Assembly* tab, which will open a tab page similar to that shown in the next figure.

Modify BOM/Baseline

Effectivity | **Build Assembly**

Major Assembly		Subassembly			
Part Number	CAGE	Part Number	CAGE	Qty	U/M
C-BAND EDFA BOOSTER	MRC	AA1006	MRC	15	M
		AA5001	MRC	30	CM
		AB9002	MRC	1	EA
		AG8001	MRC	1	EA
		AG8002	MRC	1	EA
		AH3003	MRC	1	EA
		AH3011	MRC	1	EA
		AJ1009	MRC	1	EA
		AJ1028-01	MRC	1	EA

Component Assembly

Part Number	CAGE
C-BAND EDFA BOOSTER	MRC

Subassembly Detail

Description: EDF, MP980 Serialized: No

Revision: - Security: Unclassified

Source: Make Type: Component

Category: Hardware Comments:

Status: Active

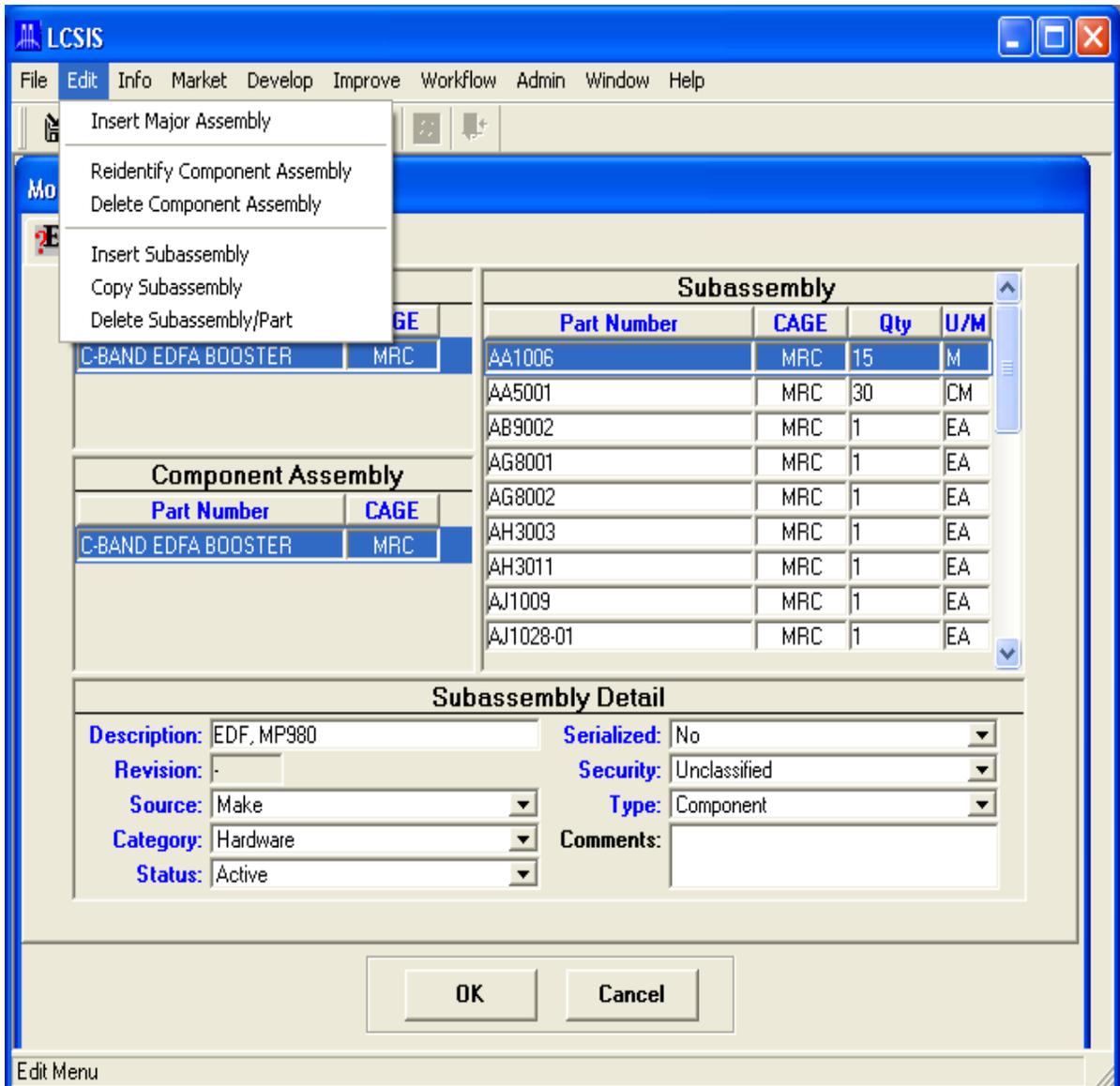
OK Cancel

Ready

Modify BOM/BaselineScreen with Build Assembly Tab Page Displayed

The *Major Assembly* (upper left hand corner) section of the tab page provides an open text box for typing in the **part number** of the highest level assembly being defined. The other

three sections of this tab page contain text boxes for entering detailed data about that assembly and all of its subassemblies/parts. The *Edit* drop-down menu (shown in the next figure) provides options for adding, defining, and/or removing assemblies and/or subassemblies on this tab page.



Edit Drop-down Menu for Build Assembly Tab Page for Modify BOM/Baseline Screen

The user should begin by clicking on *Insert Major Assembly* in the *Edit* drop-down menu,

which will result in a dialog box appearing offering the user the choice of copying data from another assembly in the VISIBLE LCSIS database. If no similar item is known to exist, the user should click on the *No* command button and proceed to the tab page to define the new assembly.

Data should be entered beginning with the highest level and working downward through the hierarchy in order to establish the parent-child relationship for each subassembly/part and its next higher assembly (NHA). This linkage is accomplished by first clicking on the part number of the NHA of a subassembly/part to be inserted/copied in the *Assembly* column before using the *Edit* menu to insert/copy a part number into the *Subassembly* section.

If the part number is for an assembly being copied, VISIBLE LCSIS automatically will simultaneously copy the subassembly's part number and CAGE code into the *Assembly* column, along with the part numbers and CAGE codes of all of its subassemblies, and also will copy the detail information on all of its components. If the part number being inserted is for an item not previously in the VISIBLE LCSIS database, the user types in the **part number**, **CAGE code**, **quantity**, and **unit of issue** for each subassembly/part in the appropriate blank text boxes in the *Subassembly* section of the *Modify BOM/Baseline* tab page. After entering this information for a given subassembly/part in the center portion of the tab page, the user proceeds to the *Detail* section, where he/she may accept all of the default settings, or may change any by clicking on the appropriate alternative in the corresponding drop-down list box or by typing the desired **description** or **comment** in the applicable text box.

When one or more assemblies have been copied from an existing baseline, the user may then employ the *Edit* drop-down menu (illustrated in the next figure) to add or delete subassembly and/or part information required to distinguish the characteristics of items in the new BOM/baseline, including quantities and units of issue, from those of the BOM/baseline from which it was copied.

When performing any of these functions, it is important to bear in mind that all items from an existing BOM/baseline were (and still are) under configuration control. When a part within a product is changed so that it is no longer interchangeable with its previous version (i.e., it does not match in form, fit, and function), it must be assigned a new identifier before the change can be made. The standard rule is to reidentify the NHA and all subsequent higher assemblies up to and including the level at which interchangeability is re-established. This should be done beginning with the highest indenture level affected and working down through the hierarchy. If this has not been done, a message box similar to that shown in the next figure will appear advising the user that the NHA must be reidentified before proceeding.



Next Higher Assembly Status Information Message Box

Likewise, if a subassembly/part is deleted, the affected NHA is no longer interchangeable with its previous version, and its NHA must be assigned a new identifier before the deletion can be made.

The following are the edit options available:

- *Reidentify Assembly* -- Allows user to reidentify any selected assembly in the *Assembly* section. A dialog box similar to that illustrated in the next figure will appear requesting the user to type in a new **identifier**, and also to select in which of the NHAs the subassembly is to be reidentified.

Reidentify Major Assembly C-BAND EDFA PRE-AMPLIFIER and CAGE MRC

Major Assembly Number: C-BAND EDFA PRE-AMPLIFIER

CAGE: MRC

Next Higher Assembly	CAGE	Description	Select
	MRC		<input type="checkbox"/>
	OPT		<input type="checkbox"/>
	WSC		<input type="checkbox"/>

OK Cancel

Reidentify Assembly Dialog Box with CAGE Code Drop-down List Box Displayed

Click on the Select check box(es) beside the NHA (or NHAs) in which the subassembly is to be reidentified, and then click on the *OK* command button to return to the As Planned screen, which will reflect the reidentification of the selected assembly and/or assemblies.

- *Delete Assembly* -- Allows deletion of an assembly at any time prior to establishment of BOM/baseline. Since an assembly may be a subassembly in more than one NHA, VISIBLE LCSIS will present the user with a dialog box requiring that he/she identify from which NHA(s) the item is to be deleted by clicking on the appropriate check box.
- *Insert Subassembly* -- Opens a row of blank text boxes in the *Subassembly* section of the *Modify BOM/Baseline* tab page. (See instructions for data entry and establishing parent-child relationships above.)
- *Copy Subassembly* -- Allows reuse of any assembly in the VISIBLE LCSIS database as a subassembly in the NHA being defined. A dialog box will appear requesting the user to identify the BOM/baseline from which information about the assembly is to be

copied. (See guidance concerning establishment of parent-child relationships for subassemblies above.)

Copy Assembly as Subassembly of Component Assembly APU MODULE and CAGE MRC

Assembly	CAGE	Rev	Description	Category	Status	Serial	Security	Source
C-BAND EDFA PRE- A	MRC	-	TOP ASSEMBLY	Hardware	Active	Yes	Unclassified	Make
CBTS	MRC	-	TOP ASSEMBLY	Hardware	Active	Yes	Unclassified	Make
CBTW	MRC	-	COMPUTER BASED TRAINING WDF	Hardware	Active	Yes	Unclassified	Make
MPC-900	MRC	-	COMPUTER SYSTEM UNIT	Hardware	Active	Yes	Unclassified	Make
MPC-901	MRC	-	COMPUTER SYSTEM UNIT	Hardware	Active	Yes	Unclassified	Make

Part Attributes	
Attribute	Value

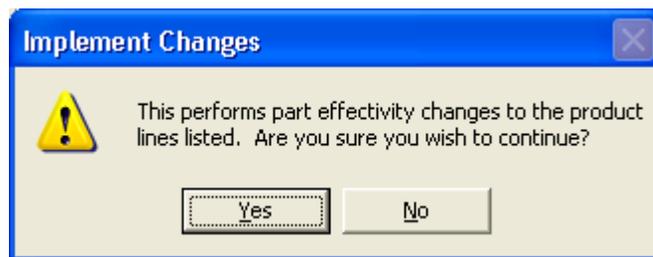
OK Query Cancel

Copy Assembly Dialog Box

- *Delete Subassembly/Part* -- Allows user to delete any subassembly or part. First, click on the part number of the subassembly's next higher (parent) assembly in the *Assembly* section of the tab page and then click on the part number of the subassembly/part to be deleted in the *Subassembly* section. Finally, click on *Delete Assembly/Part* in the *Edit* drop-down menu. If the subassembly/part can be deleted (see above), a message box will appear requesting confirmation of the deletion. Clicking on the *Yes* command button will complete the process, and will return the user to the *Modify BOM/Baseline* tab page, which will reflect the deletion of the subassembly and all of its components from the specified NHA.

In the lower (Product Effectivity) section, click on the check boxes of all BOMs/baselines in which corrections are to be made. All As Planned BOMs/baselines must be selected. If the corrections for a selected As Built baseline only apply to a set of serial numbers within that baseline, use the *Edit* drop-down menu to open a set of text boxes for inserting a serial range and a break-in point (serial number), if applicable.

When completed, click on the *OK* command button. At that point a warning dialog box similar to that shown in the next figure will appear advising the Application Administrator of the consequences of this action and requesting confirmation of the command.



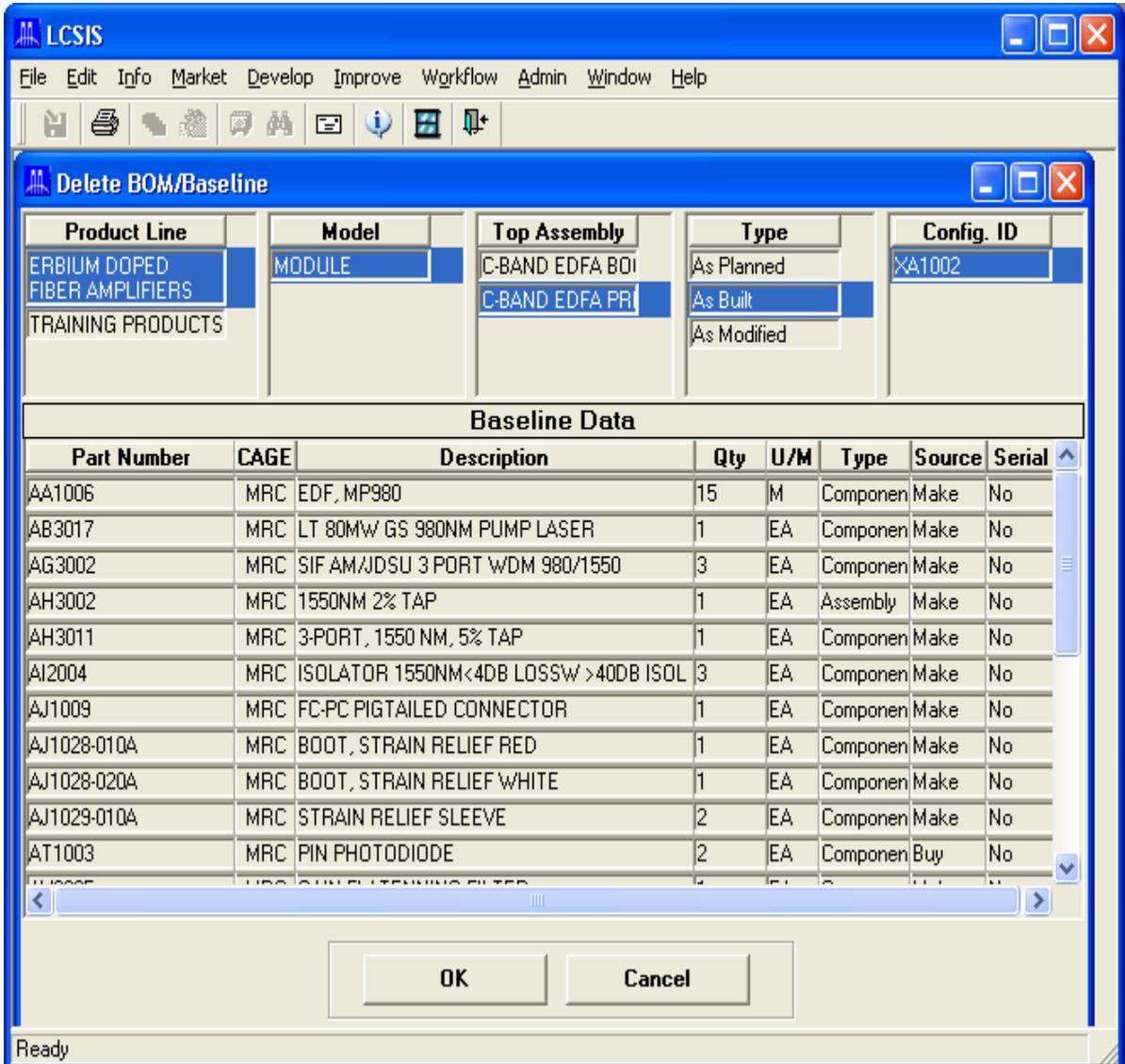
Implement Changes Warning Dialog Box

Clicking on the *Yes* command button completes the process. Corrections will be made to all baselines designated, and VISIBLE LCSIS will automatically notify the Product Managers and Data Managers for the affected baselines of the changes via their respective Workbaskets.

Delete BOM/Baseline

Under certain circumstances the Application Administrator may find it necessary to delete a bill of material or a baseline, e.g., one that is incomplete due to a system error during creation, one that is redundant, or one that has not been nor ever will be put into production. The *Delete BOM/Baseline* screen provides the Application Administrator with this capability, subject to certain restrictions (see below).

Clicking on *Delete BOM/Baseline* in the *Utilities* submenu of the *Admin* drop-down menu opens the *Delete BOM/Baseline* screen, an example of which is shown in the next figure.



Delete BOM/Baseline Screen

Screen Description

The upper portion of this screen contains text boxes for selecting the product line, model,

top assembly, type, and configuration identification (if applicable) of the BOM or baseline to be deleted. The lower portion (*Baseline Data*) of the screen displays data for that BOM/baseline for reference.

Deleting BOMs or Baselines

Any BOM or baseline can be deleted, as long as no changes have been proposed against in the Product Improvement module. An information dialog box similar to that shown in the next figure will appear advising the user if this is the case.



Baseline Status (Change Documents Submitted) Information Dialog Box

Existing BOMs and baselines must be deleted in the inverse order in which they were created, i.e., before deleting an As Built baseline, all As Modified baselines derived from it must be deleted; and before deleting an As Planned baseline, all As Built baselines derived from it must be deleted. If derivative baselines exist for the baseline selected for deletion, an information message box, similar to that depicted in the following figure, will appear.



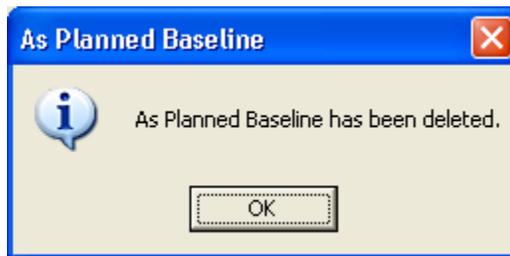
Derivative Baseline Status Information Message Box

To delete the selected BOM or baseline, click on the *OK* command button on the *Delete BOM/Baseline* screen. As a final check of the user's intentions, a warning dialog box (similar to that shown in the next figure) will appear asking for confirmation.



Baseline Deletion Warning Dialog Box

Clicking on the *Yes* command button permits the deletion process to continue. When the BOM or baseline has been deleted, a message box similar to that illustrated in the next figure will confirm the action.



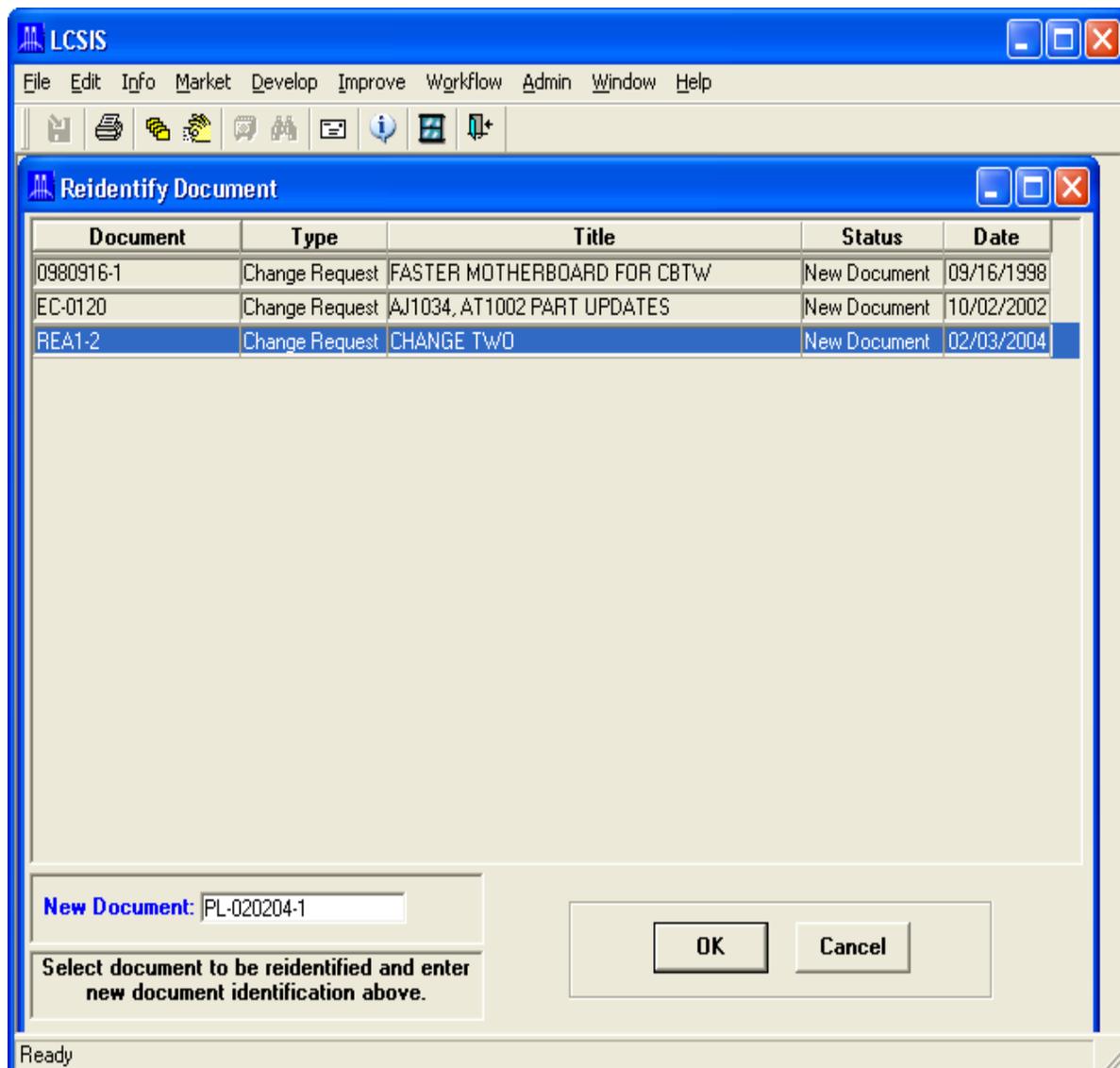
Baseline Deleted Information Message Box



NOTE: If all Top Assemblies under a given Product Line/Model combination have been deleted, the user also may delete that Product Line/Model in the Product Development (*Develop*) module (see Visible LCSIS User's Guide, Chapter 6, Product Development).

Reidentify Document

The *Reidentify Document* screen allows the Application Administrator to change the identifier of any change document. This capability provides the user with an easy method for bringing existing change documents into compliance with whatever identification scheme is currently in use.



Reidentify Document Screen

To reidentify a change document, click on the document and type in a new document **identification** in the text box provided. Clicking on the *OK* command button will change the document's identifier in the VISIBLE LCSIS database.

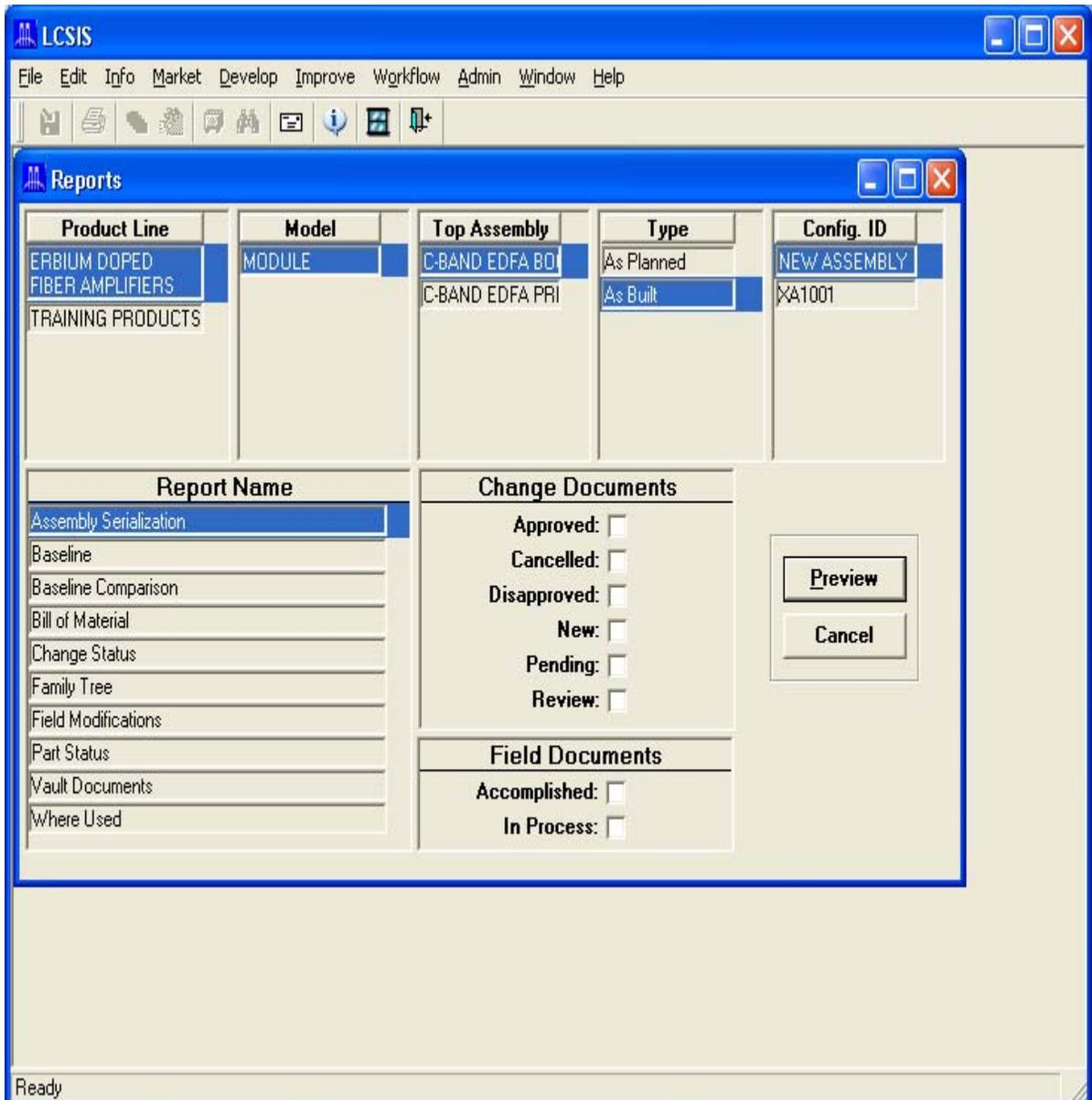


NOTE: Changes on the *Reidentify Document* screen itself will not be reflected until the screen has been exited and recalled.

4 *VISIBLE LCSIS Reports*

Standard Reports

VISIBLE LCSIS provides the user with the capability to view on-screen and/or print out a series of useful reports containing the latest product data compiled from the most frequently used screens in the Product Information (*Info*) module. Clicking on Reports in the *Info* drop-down menu will access a report selection screen.



Report Selection Screen

Screen Description

The upper portion of the screen contains drop-down list boxes for selecting the product line, model, and top assembly, as well as the type (As Planned, As Built, or As Modified) of BOMs/baselines, and the configuration identification of the As Built or As Modified end item for which the report is desired. The lower portion of the screen contains a list box for selecting the type of report, check boxes for selecting the types of change documents to be included in a given report, and command buttons for initiating or canceling the report generation process.

Processing Reports

To process any of the reports listed below, begin by clicking on the desired product line, model, top assembly, type, and configuration identification (if applicable) in the upper portion of the *Reports* screen. Then click on the subject of the report desired in the list box in the lower left portion of the screen.

When all selections have been completed, the user can then click on the *Preview* command button to view the selected report on screen. Each *Report Preview* screen will display the report as it would be printed. Each report will contain the product line, model, top assembly, type, and configuration item (if appropriate) selected, as well as the following information about the report itself: the name of the user initiating the report; the number of pages the report contains; and the date of report. Use the vertical scroll bar to view all of any page, and press <Page Down> or <Page Up> to move from one page of a multi-paged report to another.

A summary description of each report is provided below. A more complete description of each report along with supporting illustrations is provided in the *VISIBLE LCSIS User's Guide*.

(1) Assembly Serialization Report

An Assembly Serialization Report will show each serialized top assembly manufactured to date in the selected As Modified baseline, and the serial number of every serialized sub-assembly installed in each, along with the revision, description, and date of installation for each subassembly. In addition, every change proposed for a serialized top assembly will be listed, by document number, along with its status and date of status, and the baseline break-in point and range (end serial number).

(2) Baseline Report

A Baseline Report will show the entire physical item hierarchy, including all supporting documents for each item in the hierarchy, for the selected model/configuration identifica-

tion, formatted in the following columns: Part Number; Revision; Description; Quantity; Unit of Measure; and Next Higher Assembly (NHA).

(3) Baseline Comparison Report

The Baseline Comparison Report will show all differences between two selected baselines. The first of the two baselines to be compared will be the one selected in the upper portion of the *Reports* window, and clicking on the *Preview* command button will open a *Compare Baselines* dialog box.

After selecting the second baseline in the dialog box, click the *OK* command button to initiate the comparison. The part numbers contained in each column are components of that particular baseline, but not of the other.

(4) Bill of Material Report

A Bill of Material Report will show the entire physical item hierarchy for the selected model/configuration identification formatted in the following columns: Part Number; Revision; Description; Quantity; Unit of Measure; and NHA.

(5) Change Status Report

A Change Status Report will show the status of all change documents (in those categories that were selected in the check boxes on the *Reports* screen, i.e., approved, new, pending, etc.) that affect every assembly, subassembly, and/or part in the selected configuration identification of the end item. The following information concerning each change document will be included in this report:

- *Document Number* -- Unique identifier assigned to document.
- *Type* -- Nature of document, i.e., change request, trouble report, waiver, deviation, or field modification.
- *NOR/SCN Number* -- Unique identifier assigned to notice of revision (NOR) or specification change notice (SCN).
- *Assembly Number* -- Part number of assembly affected by change.
- *Status* -- Progress of document in review process, e.g., pending, approved, disapproved, etc.
- *Status Date* -- Date of action in *Status* column.
- *Implementation Code* -- Status of approved change implementation, i.e., has affected documentation been revised: *Yes* or *No*.

- *Implementation Date* -- Date of change implementation.
- *Old Rev* -- Superseded revision designator.
- *New Rev* -- Revision designator resulting from implementation of change. (A plus (+) in this column indicates that a change has been approved but has not been implemented.)

(6) Family Tree Report

A Family Tree Report will show the indentured physical item hierarchy for the selected model/configuration identification formatted in the following columns: Level; Part Number; Revision; Description; Quantity; Unit of Measure; and NHA. In addition, the status of all existing change documents (in the categories selected in the check boxes on the *Reports* screen) for each part number will be shown below the part number.

(7) Field Modifications Report

A Field Modifications Report will show all field modification documents that affect the selected As Modified baseline. The following information concerning each change document will be included in this report:

- *Serial Number* -- Identifier of top assembly affected by the field modification.
- *Date* -- Date serial number assigned to assembly.
- *Customer* -- Client for whom top assembly was built.
- *Status* -- Approved or in progress.
- *Date* -- Date of action in *Status* column.
- *Comments* -- Any additional information concerning field modification.

After selecting the affected baseline in the upper portion of the *Reports* screen, click on *Field Modifications* in the *Report Name* selection list, and then click on the desired modifications (i.e., accomplished and/or in progress) in the *Field Documents* check boxes.

Clicking on the desired modification and the *OK* command button will cause the Field Modifications Report to be displayed on a *Report Preview* screen.

(8) Part Status Report

A Part Status Report is similar to a Change Status Report in that it will show the status of change documents affecting a baseline. However, whereas the Change Status Report will reflect change documents for every assembly, subassembly, and/or part in the selected

configuration identification of the end item, the Part Status Report only shows the status of change documents (in those categories that were selected in the check boxes on the *Reports* screen, i.e., approved, new, pending, etc.) affecting a single, specific part number. Clicking on the *Preview* command button on the *Reports* screen opens a *Select Part Number* dialog box that is used to locate/select the subject part in the designated baseline.

Once the part has been located in the dialog box, clicking on the *OK* command button will cause the Part Status Report to be previewed on screen.

(9) Vault Documents Report

VISIBLE LCSIS is capable of generating a report showing a complete, systematically arranged listing of every document in the Product Vault affecting a given baseline.

As do all of the *Report Preview* screens, the top portion of this screen contains information about the subject of the report, as well as about the report itself. The lower portion of the screen displays an indented listing of every document contained in the Product Vault for each displayed part number in the selected baseline, arranged in a multi-tiered, column format.

(10) Where Used Report

The Where Used Report will show every next higher assembly (NHA) in which a selected subassembly or part is used within a given product line, model, top assembly, and configuration identification (for As Built baselines). Clicking on the *Preview* command button on the *Reports* screen opens a *Select Part Number* dialog box that is used to locate/select the subject part in the designated baseline. Once the part has been located, clicking on the *OK* command button will cause the Where Used Report to be previewed on the screen.

(11) Project Status Reports

The Project Status Report allows the user to view the status of any VISIBLE LCSIS Workflow project. A Specify Retrieval Criteria dialog box will appear allowing the user to search for a particular project or view the status of all projects. The upper portion of this screen displays the selected project's name, description, start and end dates, and assigned workflow name. A Folder command button provides access to all electronic files that have been placed in the project's workfolder.

To preview and print out a copy of a tabular formatted Project Status Report for any VISIBLE LCSIS Workflow project, click on Report in the Workflow drop-down menu. A Specify Retrieval Criteria dialog box will appear allowing the user to search for a particular project or to view a report on the status of all projects.

Printing Reports

To print out all (or any range of pages) of one of these reports, click on the *Print* toolbar button or click on *Print* in the *File* drop-down menu, and define the scope of the printout in the dialog box that appears on screen. (Note: A number of these reports, e.g., As Planned baselines for a complex model (parent assembly), may take some time to print out. It is recommended that users give consideration to printing lengthy reports during off-peak usage hours.)

Technical Support and Maintenance Agreement

In accordance with the terms of the VISIBLE LCSIS Technical Support Software Maintenance Agreement (if in effect), Visible will make all reasonable efforts to correct errors, malfunctions, and defects in the application. Visible will provide the licensee with *notice of all general updates* to the application, including corrections of bugs and addition of minor enhancements, i.e., modifications to improve VISIBLE LCSIS performance, at least once a year. Visible will provide fixes and correct bugs when an active maintenance agreement is in place. Application enhancements related to performance improvements may be purchased from Visible. However, Visible shall have no obligation to attempt to correct claimed errors if the licensee fails to incorporate any *update provided*.

Access to Visible support engineers is available during normal business hours (9 a.m. to 6 p.m., Eastern time). The telephone number is 1-(781) 778-0200.

Written requests for information or problem analysis may be obtained by mail, facsimile, or E-mail. The mail address is Visible Systems Corporation, 201 Spring St., Lexington, MA 02421. FAX queries may be transmitted to 1-781-778-0208 at any time. E-mail queries should be sent to VISIBLE_LCSIS_support@visible.com. Requests to correct errors, defects, or malfunctions that require in-depth analysis and troubleshooting must be accompanied by all relevant information, including input/output files and any supplemental files, to allow Visible technical support personnel to reproduce the error condition.

