

19. User Services

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20. Library Administration

20.1 EMD Library Administration Overview

EMD Library Administration is provided by several departments within the EMD project through the combined resources of Data Management (DM), Configuration Management (CM), and the Systems Monitoring Center (SMC). Library Administration includes (1) production, maintenance, and distribution of baselined EMD documents, (2) delivery of approved commercial off-the-shelf (COTS) software and documentation and non-contractual documentation to the DAACs and other Government facilities; and (3) DAAC-specific production, maintenance, and distribution of documents which, due to a more timely need for document updates, are produced locally and are tailored to reflect individual DAAC needs and configurations. The DAAC specific updates are eventually incorporated into EMD approved documents. There are three web sites that function as electronic distribution points for the approved data and documents. These web sites are maintained by DM, CM and SMC respectively: The ECS Data Handling System (EDHS), the EMD Baseline Information System (EBIS), and the Systems Monitoring Center (SMC). All of these processes are discussed in more detail in this Library Administration section.

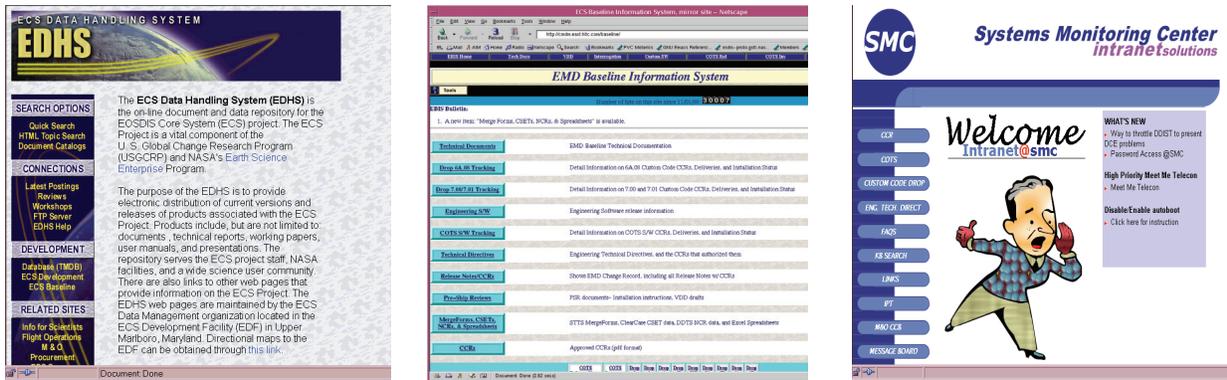


Figure 20-1. The EDHS Home Page, the EMD Baseline Information Home Page, and the Systems Monitoring Center Home Page

20.1.1 Data Management (DM)

DM is the focal point for establishing and advancing all project document/data management activities. In this regard, DM works closely with all EMD offices to provide efficient and cost-effective distribution, storage, maintenance, and retrieval of these data. DM is responsible for maintaining EMD data/documentation which includes documents under control of the EMD

Change Control Boards (CCB) and subordinate CCBs. DM's responsibilities encompass three functional areas: (1) Data Requirements refers to the deliverable documentation specified in the Contract Data Requirements List (CDRL) as well as other data items that document the EMD Project; (2) Data Control activities focus on the efficient archive, storage and maintenance of materials that support such things as milestone reviews, technical papers and white papers; and other pertinent data such as contract correspondence, progress reports, and background information; and (3) Data Support includes the preparation of documentation for publication. This includes format editing, document coordination, graphics, layout, and reproduction. The Document Coordination staff is responsible for all activities required to prepare CDRLs and other documentation required by the contract. To make documentation readily available, DM has established an electronic distribution via the World Wide Web through the EDHS, (<http://edhs1.gsfc.nasa.gov/>).

20.1.1.1 Authoring Documents

EMD CDRLs and other documents are authored by project personnel using existing tools and templates to ensure consistency and completeness with customer requirements. A standard set of software applications are used across the EMD Project. The use of this common set of production tools by both the development personnel and the documentation staff reduces redundant activities such as keystrokes and art preparation.

20.1.1.2 Formatting Documents

To ensure compliance with customer standards and to promote consistency and ease of use, a standard tool kit of document formats or templates was developed by DM. These templates are located on the Templates page of the EMD Process Assets Library web site (http://dmserver.gsfc.nasa.gov/EMD_PAL/Indices/templates.html) and are used by authors to develop CDRLs and other types of documents. After a document is written or updated by an author, it is then forwarded to DM for further processing. DM assigns the document a unique document number and reviews the document for completeness and format accuracy.

20.1.1.3 Posting and Retrieval of Documents

After documents are formatted and reviewed by DM, they are reviewed and approved by the appropriate Configuration Change Board (CCB) and other reviewers as required. Approved documents, which are not otherwise restricted, are posted to the EDHS. The EDHS web site provides on-line search and retrieval of EMD documentation and is the primary repository of information maintained by the EMD Project. DM maintains the EDHS web pages and is responsible for the integrity of all posted documentation.

20.1.1.4 Distribution and Maintenance of Documents

EMD CDRLS and Required Documents are maintained by DM, for the life of the project. A Baseline change to an Earth Observing System Data and Information System (EOSDIS) approved document is accomplished through a document change notice (DCN) or revision. Documentation produced by the project is distributed internally and/or to the customer.

Dissemination includes printed hardcopy and/or electronic posting as indicated in the preceding section.

20.2 Configuration Management (CM) Overview

The EMD CM Office requirements and objectives in support of EMD Library Administration are to maintain and publish EMD Technical Baseline Documentation on the EMD Baseline Information System (EBIS), located at <http://pete.hitc.com/baseline/> or on the mirror site (<http://cmdm-ldo.raytheon.com/baseline/>).

20.2.1 Configuration Management (CM)

The EMD Technical Baseline documents are updated when the EMD CCB approves CCRs that pertain to the DAACs. The EMD Technical Baseline documents are defined in 905-TDA-001, EMD System Baseline Specification.

The EBIS contains several different types of documents within the EMD Project, such as:

- Technical documents, posted as CCRs are approved by CCB
- Custom software tracking information (e.g., custom code release CCRs, deliveries, and installation status)
- Engineering software (HOTSHELF) release information
- COTS software tracking information (e.g., COTS software CCRs, deliveries, and installation status)
- Technical directives
- Release notes
- Pre-ship reviews (PSR) documents
- CCRs and eCCRs (electronic CCRs)
- COTS release notes
- COTS inventory
- EMD "as built" configurations

20.2.1.1 Posting/Retrieval of Documents/Software from Configuration Management Server

Information being disseminated on the EMD Baseline Information System (EBIS) must have been approved by the CCB.

Documents are posted in PDF format, and are posted in accordance with 905-TDA-001, EMD System Baseline Specification. Documents are posted on the EBIS with the current revision level for that document. If there is any question relating to any document on the EBIS page, contact the CM representative listed on the web site page.

20.2.1.2 EMD Software Library Maintenance

The EMD Software Library is responsible for controlling and tracking all approved COTS software for the project. CD's, tar files, and other media is disseminated to the SMC or DAACs

depending on the type of COTS software. The Software Library maintains previous versions of COTS products and has the responsibility to ensure that only COTS products have an approved CCR before release of the product.

20.3 Systems Monitoring Center (SMC) System Overview

The SMC system requirements and objectives in support of EMD Library Administration are overall system performance monitoring, coordinating, and setting system wide policies and priorities

20.3.1 Systems Monitoring Center (SMC) System

The SMC servers are the distribution points for:

- Staging and distribution of EMD custom/COTS software deliveries.
- Distribution of non-contractual documentation to the sites, including documents such as README files, COTS electronic instructions, technical white papers, CCRs, NCR workaround instructions, and database scripts.
- Copies of many deliverables, including (but not limited to) binaries, executables, Toolkit deliveries, test data, NCR workarounds, README files, and general instructions.

Information can be retrieved from the SMC by accessing the web site. The URL is as follows: <http://m0mss01.ecs.nasa.gov/smc/default.html>

20.3.1.1 Posting/Retrieval of Documents/Software from Systems Monitoring Center (SMC) Server

The Systems Monitoring Center Staff will be responsible for the dissemination of information provided to the SMC. Information can come from a variety of sources such as EDF, DAACs, and others. The submitter notifies the SMC staff (via phone, pager, or e-mail) that the files are ready. The software and/or supporting documentation can either be pushed to the sites or pulled by the sites.

20.4 On-Site Documentation Overview

On-site documentation requirements and objectives in support of EMD Library Administration are to generate site-specific documentation in accordance with program standards and conventions for format storage and control. EMD resources will be kept informed and utilized as appropriate

20.4.1 On-Site COTS Document and Software Maintenance

EMD products deployed to the operational sites that have been released for operational use are maintained in the EMD Documentation and Software COTS Library maintained at each site (On-Site SW Library). Site personnel maintain partitioned libraries to facilitate access control of science software and other software not developed by EMD. Site personnel are responsible for any CM activities concerned with this library.

21. COTS Hardware Maintenance

21.1 Overview

In this section, discussion of commercial-off-the-shelf (COTS) hardware maintenance support includes COTS hardware procured for the EMD Project and some Government furnished property (GFP).

The following document is referenced in this section:

- Property Management Plan for the EMD Project, 105-EMD-001

21.2 COTS Hardware Maintenance - General

The Integrated Logistics Support (ILS) Office at the EDF is responsible for COTS hardware maintenance. Local Maintenance Coordinators (LMC) are responsible for implementation of EMD maintenance policy at the DAACs. Questions about COTS hardware maintenance policy are to be addressed to ILS Manger through the ILS Maintenance Coordinator, using the contact procedures found in the last sentence of this section.

COTS hardware maintenance consists of preventive and corrective maintenance. COTS hardware preventive maintenance is the responsibility of the contracted COTS hardware maintenance providers. COTS hardware corrective maintenance is the responsibility of the contracted COTS hardware maintenance providers, and/or the Local ILS Maintenance Coordinator (LMC) using local DAAC resources. The LMC is the DAAC's local point of contact for directing and coordinating corrective maintenance of EMD COTS hardware. COTS hardware maintenance support is available from contract COTS hardware maintenance providers according to the terms specified in each maintenance contract. Since all EMD hardware is either covered by an onsite, return to manufacturer, or time-and-material maintenance contract there is no need for robust site spares provided by the EMD program. Additionally EMD is an IDIQ Task Order contract, and Task 201, Sustaining Engineering, does not authorize purchasing additional spares; therefore, EMD will not purchase additional spares for Task 201. Depending on the task, additional site spares may be purchased for future tasks, but that decision will be made on a task-by-task basis. Any spares that remain from the ECS contract were transferred to the EMD contract and will continue to be used until exhausted. Site spares that may remain from ECS mainly consist of monitors, keyboards, mice, and a variety of circuit boards. To facilitate easy tracking of maintenance spares at each DAAC, the following method of identification will be used: in ILM, the ECS NAME for the spares will be "spare" and the Item Status will be "SP". The LMC ensures that all COTS hardware maintenance providers comply with requirements of this section and that the LMC will complete the Maintenance Work Order (MWO) form with accurate information in a timely manner. The LMC will send the completed MWO form to the ILS Maintenance Coordinator at the EDF. The ILS Maintenance Coordinator is assigned to the ILS Office. The ILS Maintenance Coordinator is available either by email or

telephone during normal work hours or by cell phone or pager for after-hour emergencies. The ILS Maintenance Coordinator's name, email address, cell phone, and pager numbers will be forwarded to the DAAC LMCs under separate cover.

21.2.1 Corrective Maintenance

Corrective maintenance is the unscheduled repair of equipment, to include fault detection, diagnosis, isolation, repair and recovery of software and databases if appropriate. The maintenance of hardware items may be performed on site by the LMC or the contracted maintenance provider, or by returning the failed component to the maintenance depot for repair or replacement.

21.2.2 Preventive Maintenance

Storage Technology automated tape library robots are currently the only hardware requiring scheduled preventive maintenance. Preventive maintenance is performed by the original equipment manufacturer (OEM) on this equipment. OEMs will coordinate preventive maintenance visits to the DAAC with the LMC. LMCs will record on the maintenance work orders (MWO) any downtime experienced as a result of preventive maintenance.

21.2.3 Configuration Management

Configuration Management (CM) requirements are addressed in Chapter 9 of this document. The LMC ensures compliance with the CM requirements resulting from a hardware maintenance action.

21.2.4 COTS Hardware Maintenance Safety

Hardware maintenance will be accomplished in a manner that ensures personnel and equipment are protected from harm. The LMC will ensure that local safety requirements are known and observed by local site support personnel and COTS hardware maintenance providers during COTS hardware maintenance.

COTS hardware safety practices include electrostatic discharge (ESD) protection. The ESD program will be locally developed by the LMC using applicable DAAC procedures for guidance. When not being worked on or when outside protected areas, electronic parts and assemblies are to be covered by ESD protective covering or packaging. During installation or removal of electronic parts or LRUs, a common ground will be established between the technician, work area, the part, and the equipment it is to be installed in/removed from. It is the responsibility of the LMC to ensure compliance with these safety procedures by the hardware maintenance provider and site personnel.

21.3 COTS Hardware Maintenance - Contract Information

The EMD COTS procurement organization is located at the ECS/EMD Development Facility (EDF) and is responsible for contracting for COTS hardware maintenance. Cost and support considerations may result in COTS HW maintenance being provided by a third-party provider.

Questions or comments concerning COTS hardware maintenance are to be directed to the ILS Maintenance Coordinator.

21.3.1 COTS Hardware Maintenance Contract

Information relating to COTS hardware maintenance contracts is contained in the ILS web page. The LMC can obtain specific information on all hardware maintenance contracts at the ILS web page (<http://dmsserver.gsfc.nasa.gov/ils/intro.html>). The ILS web page is kept current by the ILS Maintenance staff.

21.3.2 Information Required to Obtain COTS Hardware Maintenance

Generally, COTS hardware maintenance providers require an access, or site, code and/or the serial number of the host equipment to verify that the failed item is covered under a maintenance contract. For example, if maintenance were requested for a terminal/monitor or disk drive, the serial number of the parent workstation or server would need to be provided to the maintenance provider. The serial number may also be the access code for that provider. The information needed by the various COTS HW maintenance providers to verify that maintenance is authorized is specified on the ILS web page. DAAC site-specific site access numbers/site codes/contract numbers, if required, are also listed on the ILS web page.

21.4 Hardware Repairs - Standard

Users/operators of EMD hardware should report hardware/system problems to the site's LMC for resolution. Users, operators, and support personnel who encounter a HW problem will report the problem according to Chapter 8, Problem Management. LMCs will complete the MWO form and forward it to EDF. The LMC will provide timely feedback to the user/operator on the resolution of the problem. The maintenance role of the LMC includes the following:

- (1) Receiving notification of HW problems.
- (2) Completing the MWO form.
- (3) Updating the MWO form with repair information including problem resolution and identification of failed and replaced parts in a timely manner.
- (4) Send the completed MWO form to the ILS Maintenance Coordinator at the EDF.
- (5) Dispatching the appropriate maintenance technician [system administrator (SA), network administrator (NA), or local or vendor repair technician].

The ILS Maintenance Coordinator is responsible for:

- (1) Reviewing MWO and repair actions for appropriateness and completeness.
- (2) Requesting missing MWO information from LMC.
- (3) Entering the MWO into ILM.

- (4) Ensuring the ILM database is updated based on property record actions from the MWO.
- (5) Identifying support problem areas.

21.4.1 Hardware Problem Reporting

Once a failure occurs, the operator, SA and/or NA will isolate the problem to its source (i.e., Operating System, COTS application software, EMD custom software, science software, network, or COTS hardware) using the actions in below, DAAC Hardware Problem Reporting Procedures.

Table 21.4-1. DAAC Hardware Problem Reporting Procedures

Step	Occurrence	Action
1	System problem discovered by an SA, NA, or operator,	a. If local troubleshooting does not fix the problem and it is determined to be hardware related, notify the LMC who will contact the appropriate maintenance vendor. The LMC will start an MWO when the COTS maintenance vendor is notified.

21.4.2 Hardware Corrective Maintenance Actions

Hardware problems are forwarded to the LMC. The LMC will attempt to identify the cause of the problem and employ DAAC resources to resolve the problem. If unable to correct the problem using DAAC resources, the LMC arranges for on-site maintenance by the appropriate maintenance provider. Contract On-Site Hardware Maintenance.

Hardware corrective maintenance actions are described in Table 21.4-2.

Table 21.4-2. Hardware Corrective Maintenance Actions

Step	Occurrence	Action
1	COTS HW problem not resolved by initial troubleshooting by operator, SA or NA.	<ul style="list-style-type: none"> a. LMC notified of HW failure by operator, SA or NA. b. LMC opens MWO and adds any cross-reference information for related open Remedy Trouble Ticket. (If existing)
2	LMC attempts to identify cause of problem.	<ul style="list-style-type: none"> a. Verifies actions and results to date by contacting SA and/or NA. b. Starts corrective maintenance process.
3	Problem resolved by LMC or local staff.	<ul style="list-style-type: none"> a. If problem can be resolved without hardware replacement (e.g. re-seat component, cable, etc): <ul style="list-style-type: none"> 1) Correct problem, and verify resolution. 2) Prepare an MWO describing the maintenance action and forward to the EDF. b. If problem can be resolved by replacement of failed LRU with maintenance spare (if available): <ul style="list-style-type: none"> 1) Replace failed LRU and record following in MWO: <ul style="list-style-type: none"> a) Part number, serial number, and model/version number of replaced LRU b) Part number, serial number, and model/version number of new LRU c) Down time (elapsed hours/minutes) d) Delay time identified by reason 2) CM requirements are accomplished following procedures in Chapter 9. 3) Order replacement of failed LRU in accordance with Section 21.4.1. 4) Replace the failed LRU in accordance with Section 21.4.2. 5) Prepare a MWO describing the maintenance action and forward to the EDF.
4	Problem not resolved by LMC or local staff.	<ul style="list-style-type: none"> a. LMC notifies the maintenance contractor by obtaining contractor information from the ILS web page. b. LMC invokes return-to-depot support where appropriate, c. Prepare an MWO describing the maintenance action and forward to the EDF.

21.4.3 Contract On-Site Hardware Maintenance

When on-site hardware maintenance support is necessary, the LMC will notify the applicable maintenance contractor and request assistance. The call for support will be documented in the MWO by the LMC, noting the date and time the contractor was called. It is important that all vendor maintenance activities start and stop times associated with the activities are recorded in the MWO. The MWO is one the primary means of measuring, and managing the maintenance vendor’s contractual performance in support of the EMD system availability goals. Data fields have been specifically created in the MWO to capture this information. Refer to Table 21.4-3 for more information about obtaining on-site COTS hardware maintenance support.

Table 21.4-3. Obtaining On-Site Hardware Maintenance Support (1 of 3)

Step	Occurrence	Action
1	Local support effort did not resolve the problem.	LMC gathers information needed to obtain contract maintenance support and contacts the COTS maintenance vendor. Common information that is needed when contacting maintenance vendors is described below. <ol style="list-style-type: none"> 1) Make, model, serial number, and location of failed systems. 2) Description of problem and symptoms. 3) Criticality of the COTS hardware experiencing the problem.
2	LMC actions	Jointly determine between maintenance contractor and site operations staff an acceptable time to bring the equipment down for maintenance [only applicable when entire device is down. Coordination to schedule down time is only required for a functional, but impaired, device]
3	Maintenance technician arrives at the site.	<ol style="list-style-type: none"> a. LMC arranges for site access using local established procedures. b. If required, LMC requests System Administrator site Help Desk, or other appropriate and authorized personnel to shut down the machine at the predetermined time so that corrective action(s) can begin. Note that any user affected by this action must be notified prior to the machine/system shutting down. c. LMC escorts maintenance technician to the hardware d. LMC ensures maintenance provider's technician follows all ESD precautions. LMC assists the maintenance technician in resolving the problem. This includes: <ol style="list-style-type: none"> 1) Arranging for a demonstration of the problem (if possible) 2) Arranging for the equipment to be shut down. 3) Obtaining site available technical references, when needed

Table 21.4-3. Obtaining On-Site Hardware Maintenance Support (2 of 3)

Step	Occurrence	Action
3a	Maintenance technician corrects the problem by replacement of parts.	If a part is replaced, the LMC accomplishes the following: <ol style="list-style-type: none"> 1) Obtains from the failed part or the maintenance technician: <ol style="list-style-type: none"> a) Serial number, equipment identification number (the EIN number on the silver label), and model/version 2) Obtains from the new part: <ol style="list-style-type: none"> a) Part number, serial number, and manufacturer's model number 3) Updates the MWO with following information: <ol style="list-style-type: none"> a) Actions taken to correct the problem. b) Part number, serial number, and model/version, and EIN (if applicable) of the old and new item c) Name of the item replaced d) Arrival date and time e) Time and date corrective action started f) Time and date corrective action completed g) Any delay time experienced in completing the corrective action and reason for delay time to repair
3b	Maintenance technician corrects the problem without replacement of parts	If no parts were replaced, the LMC updates the MWO with: <ol style="list-style-type: none"> 1) Actions taken to correct the problem. 2) Time and date technician arrived 3) Time and date repair was started and completed
3c	LMC requests the SA to make the system functional	<ol style="list-style-type: none"> a. SA restores data, operating system, patches or other SW items to bring the system on line. b. Notes the amount of restore time in the MWO.
3d	Maintenance technician does not resolve the problem	<ol style="list-style-type: none"> a. LMC request the Maintenance vendor provide additional technical and or managerial resource to resolve the problem. b. LMC notifies ILS Maintenance Coordinator that problem repair effort as been delayed, and escalated. c. LMC documents all escalation activity in the MWO until further action is taken. d. Receipt of a completed copy of the dispatch trouble ticket from the vendor e. The information from the vendor's ticket is consistent with the information in the MWO f. Record all actions for future reference and for help in completing the MWO
4	LMC reports actions taken	<ol style="list-style-type: none"> a. After the failure is repaired complete the MWO and send it to the EDF. b. If appropriate ensures the local and or EMD Configuration Control Board is properly notified of the configuration alterations and requests a formal change using procedures in Chapter 8.

Table 21.4-3. Obtaining On-Site Hardware Maintenance Support (3 of 3)

Step	Occurrence	Action
5	LMC files	A copy of vendors dispatch sheet, and related documents in a permanent file and references the MWO or files them with copy of the MWO.

21.4.4 Return-to-Depot Support

If the OEM vendor does not provide on site support a return to vendor maintenance concept is used. There are two types of return to vendor maintenance. The ILS web page will specify which concept is to be used. One is advance replacement where the new LRU is requested prior to sending the old LRU to the vendor. If advance replacement is not provided, the LMC must return the failed item to the appropriate repair center using procedures contained in Section 21.4-2.

Table 21.4-4 provides the Return to Depot procedures.

Table 21.4-4. Procedure for Return to Depot (Advance Replacement and Return before Replacement)

Step	Occurrence	Action
1a	Advance Replacement authorized	a. Contact vendor and request replacement. b. Return broken part to vendor when new part is installed and working.
1b	Advance Replacement not Authorized	Contact the maintenance provider using the information obtained from the ILS web page.
2	Ship Failed unit to vendor	a. Obtain an RMA number and shipping instructions from the repair vendor. b. Ship the failed unit to the vendor using local shipping procedures.
3	Replacement Part is received from the COTS maintenance vendor.	a. Place a new EIN sticker on replacement LRU. b. Enters new property information into the MWO c. Install the new LRU. d. Complete the MWO and send it to the EDF.

21.5 Maintenance Spares

The maintenance contractor performing the maintenance will provide replacement LRUs. Major OEM maintenance vendors will have parts depots in the metropolitan area of the DAAC and as such vendor owned site spares are not necessary. However at LP DAAC SGI and STK maintain a minimum number of on site spares at no cost to EMD. These spares may be used for a repair that the LMC is authorized to make. After use the LMC must ensure that the spares are replaced by SGI or STK. If maintenance spares are procured by the EMD ILS Office, based on the requirements of an EMD task order, the spares allocated to the DAACS will be managed at the

DAAC by the LMC using guidance from the above referenced documents and appropriate local DAAC policies and procedures.

21.5.1 Use of Maintenance Spares

The EDF maintains a limited number of spares for EMD hardware. A list of EDF spares will be sent to the DAAC LMCs under separate cover. If these items are required email the ILS Maintenance Coordinator and if available a spare will be sent.

21.5.2 Return of Failed LRUs

The LMC is responsible for the return of failed LRUs to maintenance contractors providing replacement parts and not on site support. In such agreements the maintenance provider sends to the site a replacement for a failed component under the condition that the site will return the failed component within a reasonable time, usually not greater than 10 days. If the failed component is not returned the contract is charged the full purchase price for the item not returned.

21.6 Non-Standard Hardware Support

Non-standard COTS hardware support consists of:

- a) Maintenance support outside the PPM (Principal Period of Maintenance),
- b) Support covered under a Time and Materials contract, or
- c) Escalated support actions by the maintenance support provider.

Table 21.6-1 shows the procedure for Time and Material Support

Table 21.6-1. Procedure for Time and Material Support

Step	Occurrence	Action
1	LMC contacts	The Time and Material Support Contractor and requests maintenance.
2	Repair is completed	After the repair is completed, prepare and MWO and send it to the EDF

21.6.1 Escalation of COTS Hardware Support Problem

In some cases OEM hardware maintenance contractors do not respond to maintenance requirements in a requisite manner that ensures prompt hardware repairs. In these cases the LMC should request escalation from the onsite maintenance technician. If further escalation is necessary the LMC will request the ILS office to escalate the issue with the vendor. When requesting escalation the original vendor trouble ticket number will be used as the reference document.

21.6.2 Low Cost Equipment – Not Repaired

Server and PC terminals, keyboards, and mice are low cost items that are not repaired, because the repair costs would exceed the cost of a new item, but are replaced on a one-to-one basis by either the OEM maintenance contractor or the time and material contractor. LMCs will follow the same procedures for replacing these items as for other LRUs. If the appropriate maintenance contractor does not remove the failed items, they may be disposed of using local procedures after the MWO is completed and sent to the EDF. Property tags should be removed from the keyboards and mice before disposal.

22. Software Maintenance

22.1 Introduction

The EMD organization provides maintenance for EMD, software, and firmware systems delivered under the EMD contract to the EMD sites.

In general, EMD organizations procure, produce, deliver, and document the modifications, and enhancements made to EMD software and firmware. No custom firmware has been identified as part of the EMD program. Commercial off-the-shelf software (COTS SW), firmware, will be maintained in accordance with the EMD maintenance philosophy for software to provide centralized support for developed items and vendor support for COTS SW.

Specific software support procedures are discussed in this section. EMD Project software consists of COTS, custom-developed, and science software. Science software, developed for use on the EMD project, is the responsibility of the science community.

COTS software maintenance includes:

- Right to use COTS software products.
- Access to software vendor telephone support
- Access to vendors on line and email support
- Receive patches and upgrades.
- The DAAC maintenance activity includes: software configuration management (CM) including support for change control, configuration status accounting, audit activities, and software quality assurance (QA). Each site is the CM authority over its own resources subject to EOSDIS delegation of roles for EMD management.]

The Integrated Logistics Support (ILS) COTS Software License Manager will notify DAAC LMC, System Administrator (SA) and Network Administrator (NA) on the procedures for handling vendor liaison.

The EMD COTS SW Team provides assistance when COTS software issues exceed the capabilities of the site System Administrator or the Network Administrator to resolve problems.

22.2 COTS Software Maintenance

Operations personnel at the sites accomplish installation of patches, upgrades and software problem isolation. The COTS software vendors support COTS software procured for the EMD contract. (The term software vendor refers to the company having the legal right to authorize software use and to modify the software code.) COTS software vendor support consists of telephone support, access to an on-line solution database, providing upgrades and patches and resolving COTS software problems.

The Activity Outline in Table 22.2-1 is an overview of COTS Software Support procedures and the section number where details for performing the tasks can be found.

Table 22.2-1. COTS Maintenance - Activity Outline

Task	Section
COTS Software Maintenance	22.2
Manage COTS Software Maintenance Contracts	22.2.1
Manage COTS Software Licenses	22.2.2
COTS SW installation and upgrades	22.2.3
Obtain COTS Software Support	22.2.4
COTS SW Problem Reporting	22.2.5

22.2.1 Management of COTS Software Maintenance Contracts

The EMD procurement office at the EDF procures COTS software vendor support. Support contract is contracted for a period of one or more years and extended or modified as operationally required. Information related to COTS software support contracts is maintained on the ILS web page by the ILS staffs.

EMD COTS SW maintenance is purchased annually during the fall of the year. The COTS SW license administrator works in conjunction with procurement and COTS SW engineers to determine the products, level of maintenance and quantity of licenses to be renewed. All COTS SW maintenance recommendations are approved by the EMD Chief Architect. The ILS COTS SW License Administrator ensures that all products are identified during the maintenance renewal period.

22.2.2 Management of COTS Software Licenses

Functions of the ILS COTS SW License Administrator include the following:

- a. Maintain accountability for all COTS SW licenses procured for the EMD contract. Accountability includes tracking and reporting the as-installed location of all licenses (other than PC based products) procured for the EMD program.
- b. Assist the COTS SW organization in impact analysis of proposed COTS SW upgrades and patches on other COTS SW applications incorporated in the EMD system design. Maintain a database containing license keys of project-purchased COTS SW. The COTS SW installation team (or site) will provide the host identifications to the ILS COTS SW License Administrator who will then obtain the necessary license keys from vendors for SW installation and populating the COTS SW database.
- c. Manages licenses and/or license keys in use in the EMD contract.

- d. Obtain new licenses and/or license keys from software vendor per approved CCR requests.
- e. Assist COTS SW engineers & DAAC SAs with any COTS SW problems.
- f. Manages COTS SW vendor support contracts information.
- g. Renew maintenance support for all COTS SW in use.

COTS software license types include: floating, nodelock, site, and program licenses. Floating licenses allow users to run a product from any machine concurrently. Nodelock licenses let users run the product on a designated machine. Site licenses allow unlimited use of the SW product at a particular site, and program licenses are licenses that can be used any where in the EMD project. The EMD procurement office purchases software licenses as determined by the EMD design engineers. COTS software licenses are received and managed by the COTS SW License Administrator.

22.2.3 COTS Software Installation and Upgrades

The COTS software upgrades are subject to appropriate CCB approval before they may be loaded on any platform. The COTS Software Librarian, using procedures contained in Chapter 9, "Configuration Management," notifies the COTS SW organization of the upgrades that have been received. The COTS SW Librarian distributes the COTS software upgrades as directed by the CCB. The site System Administrators are responsible for upgrading the software on the host machine and providing follow-up information to the Configuration Management Administrator (CMA), COTS Software Librarian and the COTS SW License Administrator.

COTS software patches may be provided by the COTS software vendor in response to a DAAC's call requesting assistance in resolving a COTS software problem. The problem may or may not exist at other locations. When a COTS software patch is received directly from a COTS software vendor (this includes downloading the patch from an on-line source), the DAAC's CCB shall be informed via CCR prepared by the appropriate site personnel. It is the responsibility of the appropriate site personnel to notify the CCB of the patch's receipt, purpose, and installation status, using procedures contained in Chapter 9, "Configuration Management," and to comply with the CCB decisions. The appropriate site personnel will install the COTS SW patches as directed by the CCB. In addition to providing patches to resolve problems at a particular site, the software vendor will periodically provide upgrades of COTS software in order to improve the product. These upgrades are issued to all licenses covered by a software maintenance contract. Therefore, the COTS software upgrades will be shipped to the ILS Property Administration (PA) who receives and enters them into inventory and then forwards the media to the COTS Software Librarian and the licenses/keys to the COTS Software License Administrator. The COTS SW team will direct COTS SW deployment activities.

22.2.4 Obtaining COTS Software Support

COTS SW vendor provides contracted support. When the appropriate site personnel confirm that a problem is attributed to the COTS SW, the vendor's technical support center is contacted by authorized personnel at the site.

The software vendor's technical support center will verify contract support authorization and then assist in pinpointing the COTS SW problem to provide a recommended solution. The solution may involve a patch or work-around, or the fix may be included in a future release. If a patch exists to correct the problem, the patch will be identified and provided by the software vendor over the Internet or mailed to the requester. If a patch is required but unavailable, the site and vendor together determine the seriousness of the problem. In cases where the problem is critical, a temporary patch or work-around may be provided. If non-critical, the solution to the software problem may be scheduled by the software vendor to be incorporated in a future update or release. (NB: The DAAC and EMD CCBs must authorize the patch to be installed as a permanent installation. This decision may be made after-the-fact. If the patch is needed to proceed with operations, notify the DAAC personnel of the requirement in accordance with Configuration Management (Chapter 9) applicable requirements should be followed for baselining the change.

Generally, COTS SW vendors require a customer number, site id, and/or the serial number of the host equipment to verify that the software is covered under a maintenance contract. The information needed by the various COTS SW vendors to verify that maintenance is authorized is specified on the ILS web page. For some COTS SW vendors, names of authorized contact persons are required. The number of authorized contact persons varies with the different vendors. The ILS COTS SW License Administrator, in coordination with DAACs, arranges with the COTS SW vendors for specified personnel to become authorized contact persons. It is the responsibility of the DAACs to provide to the ILS COTS SW License Administrator the name changes to the authorized contact list as soon as known. Vendor support contact information can be found on the ILS web page located at:

<http://dmserver.gsfc.nasa.gov/ils/intro.html>

22.2.5 COTS Software Problem Reporting

- The first person experiencing or observing a potential COTS SW problem will initiate a trouble ticket according to the procedures found in Test Track Pro, (TTPRO) Chapter 8. Problem Management.
- This person will attempt to isolate the source of the problem to system configuration, hardware, network, COTS SW, custom SW, or science SW.
- If it is confirmed to be a COTS SW problem, the authorized contact person should contact the vendor's technical support center for assistance. Information on contacting the software vendor's technical support center is in Section 22.2.4, "Obtaining COTS Software Support."
- The appropriate site personnel must annotate all actions inclusive of dates, time, resolutions, and comments in the DAAC's Test Track Pro, (TTPRO) project as the repair progresses. COTS software corrective action reporting follows the procedures contained in Chapter 8, "Problem Management" and the configuration control requirements contained in Chapter 9, "Configuration Management," when a configuration item is removed and/or replaced with a different version or release.

One method of troubleshooting the COTS SW problem is to scan the software vendor's web site solutions database to learn of any solutions for similar problems. The software vendor's web site address can be obtained as stated in Section 22.2.4. Another manner of troubleshooting the COTS SW problem is to exercise any software diagnostic routine embedded or downloadable that will determine the status of the COTS SW on the equipment by reviewing the troubleshooting-diagnostics and corrective actions taken to date. These troubleshooting, diagnostics, and/or isolation procedures may be contained in the vendor's operational manuals or in locally devised troubleshooting procedures.

COTS SW problems that cannot be corrected using site and contracted software support may be escalated to the EMD SSO. The SSO is staffed with Senior Systems Engineers knowledgeable on COTS SW that can assist in diagnosing the problem.

The site Local Maintenance Coordinator may go directly to the software vendor or to the ILS COTS SW License Administrator to obtain an escalation of software vendor support if the software vendor's efforts have not produced satisfactory results within a reasonable period of time. The escalation may result in increased vendor management review of the problem resolution, the assignment of additional resources to resolve the problem, and/or a more highly qualified technician assigned to resolve the software problem.

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23. Property Management

This section describes procedures for the receipt, control, and accountability of EMD property at EMD sites. The Property Management Plan (PMP) for the EMD Project, 105-EMD-001, is the DCMA Property Administrator approved document that addresses the process and policies regarding how EMD property is to be managed. The site Local Maintenance Coordinator (LMC) at each site is the site's property administrator. LMCs should be thoroughly familiar with and comply with the policies and procedures contained in the Property Management Plan.

The LMCs support the activities of receiving, inspection, storage, issue, inventory recording, accounting, and reporting of EMD property at EMD sites. As stated above LMC should follow the particular procedures of the PMP; local procedures may be used as long as they do not deviate from the specific direction in the PMP. Locally developed procedures should be forwarded to and reviewed by the EMD Integrated Logistics Support (ILS) Office for consistency with this plan.

23.1 Receipt of Equipment and Software from Vendor

Most EMD property will be shipped to DAACs from the EDF at Landover. However there may be occasions when property will be shipped directly to the DAACs from OEM vendors. In such cases, the ILS Property Administration (PA) will fax a copy of the Purchase Order to the LMC to serve as a due-in notice. Upon receipt of the equipment, the LMC will perform a receiving inspection to verify correctness of delivery, quantity received and to determine if items were damaged during shipment. The LMC will utilize the following tables as guidance for Receipt of Incoming Items.

- Table 23.1-1, Procedure for the Receipt of Equipment
- Table 23.1-2, Procedure for Completion of the Inventory Worksheet
- Table 23.1-3, Procedure for Completion of the Non Conforming Product Report
- Table 23.1-4, Receiving Process Checklist
- Table 23.2-1, Property Received from the EDF

The worksheet for documenting inventory and the relevant checklists are located on the Web at http://dmsserver.hitc.com/EMD_PAL/Indices/Forms/il_formindex.html. The form number is ILFM001-2 and it includes the Inventory Worksheet, the Loading Dock Checklist, System Verification Checklist and Receiving Process Checklist. When all checklists are signed and verified, the LMC faxes or e-mails all forms to the ILS Property Administration and ILS Property Administration updates the Inventory Database. When a product is received that does not conform to the purchase order, the COTS Non-Conforming Product Report (NCR) form (form number ILFM001-1) is used. It is located at the same URL as the Inventory Worksheet under the **COTS Non-Conforming Product Report** link.

Table 23.1-1. Procedure for the Receipt of Property

Step	Action
1	LMC completes the Loading Dock checklist document with the following information: Printed name of receiving individual Signature of receiving individual Date of receipt Name of the carrier Shipper's bill of lading or tracking number Customer reference number (when appropriate) Number of boxes received Condition of boxes with a notation of Satisfactory or Damaged
2	LMC verifies damage, shortage, overage or other discrepancies and annotates these findings on both the carrier's and site's copy. An NCR will be completed per the instructions in Table 23.1-4.
2a	If there is obvious damage to exterior packaging at the time of delivery, obtain a signature of the carrier's representative on the shipping carrier's document and notify the ILS PA for further direction and information.
3	Begin the process of moving equipment into a controlled storage area and completing the inventory worksheet as described Table 23.1-2.

Table 23.1-2. Procedure for Completion of the Inventory Worksheet

Step	Action
1	LMC removes the equipment from the loading dock to controlled storage area.
2	Verifies the items received against purchase orders and vendor's packing list. Inspects visual condition of material and documents information on Inventory Worksheet.
3	Documents the serial, model numbers and other appropriate markings on the Inventory Worksheet. Performs final visual inspection of product to ensure no damage or non-conforming items have been received.
4	Places silver EIN tags on equipment per the instructions listed in Section 23.2.
5	Assembles equipment for burn-in and documents the burn-in process on the System Verification Checklist.
6	If required, complete an NCR per Table 23.1-3.

Table 23.1-3. Procedure for Completion of the Non Conforming Product Report

Step	Action
1	LMC verifies shipment discrepancies (include shortages, overages, and incorrect items/quantities/models).
2	Completes COTS NCR per instructions on the back of the form.
3	Sends the completed COTS NCR to the ILS PA via fax or EMAIL.
4	The ILS PA will process the NCR at the EDF and notify the DAAC of resolution.

Table 23.1-4. Receiving Process Checklist

Step	Action
1.	Verify that Loading Dock Checklist has been completed with all the appropriate information.
2.	Annotate Purchase Order number or Returned Material Authorization (RMA) on the Inventory Worksheet.
3.	If required, verify that COTS NCR has been completed and processed per Table 23.1-3.
4.	If the material is partial receipt, verify that it is segregated, labeled, marked and in a controlled storage area.
5.	If the order has discrepancies and an NCR has been forwarded to the EDF, verify that the property is segregated, labeled and documented in a controlled storage area.
6.	Verify the Inventory Worksheet, System Verification, and Receiving Process Checklist have been completed and documented. Fax or Email to the ILS PA.

23.2 Receipt of Equipment and Software from the ILS Property Administrator

The LMC will also receive equipment from the ILS PA. Table 23.2-1 defines the process of receiving EDF shipped equipment at the DAACs.

Table 23.2-1. LMC Actions for Property Received from the ILS Property Administrator

Step	Action
1	LMC receives shipment with Installation Receipt (IR) report from the ILS PA.
2	LMC inspects and verifies for shipping damage, completeness using the IR report.
3	Notifies the ILS PA immediately of any discrepancies. If discrepancies exist, annotate the IR report accordingly.
4	Sign for the property where indicated and redline location and site-specific changes on the top right header information.
5	LMC retains a copy for files and mails the original back to ILS PA.
6	The ILS PA enters the redline changes into the ILM Property Database.
7	The original signed redlined IR report and a copy of the Installation Report will be filed in the EMD equipment folder.
8	The site copies of the IR report and installation report will be filed in the site equipment folders.
9	The LMC will coordinate installation of the equipment in accordance with approved CCR and DAAC procedures.

23.3 Equipment Tagging

EMD equipment (e.g., contractor-acquired and GFP) that is separately identifiable and meets the criteria for controlled equipment as described in the Property Management Plan, will be tagged with EMD property tags. Figure 23.3-1 illustrates EMD property tags. LMCs may use either EMD or ECS property tags. ECS property tags are shown in Figure 23.3-1. EMD property tags are similar except the contract number is NAS5-030398. All property shipped from the EDF will be tagged prior to shipment. If LMCs have to tag or retag EMD property tags will be placed on the equipment so that they are visible and easily accessible by bar-code scanners. Vendor-loaned and RSC capital equipment will not be tagged with EMD property tags.

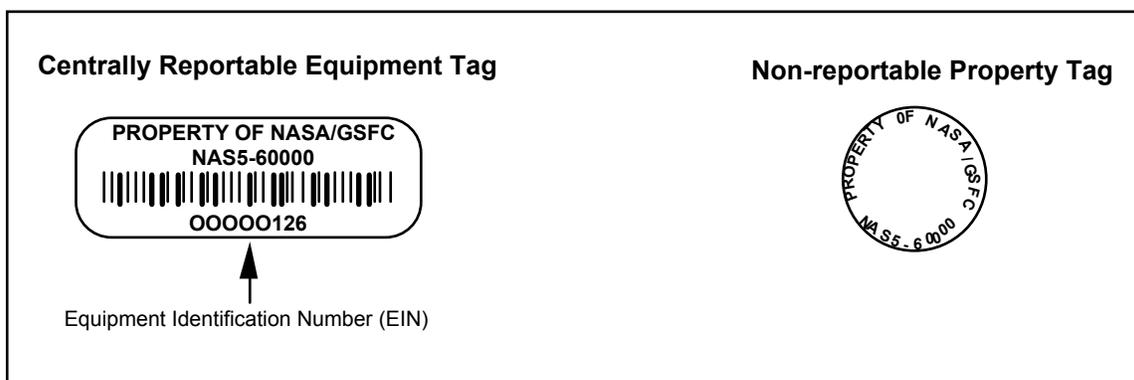


Figure 23.3-1. EMD Property Tags (Actual Size)

Components of major equipment that are not separately identifiable or stocked for use, such as spares/repair parts will not be assigned an EIN. Items not given an EIN sticker will be controlled as inventory items and recorded by manufacturer, description, model/version, serial number (if applicable), location, and quantity and with the parent EIN.

Property tags of loaned GFP equipment containing a NASA equipment control number (ECN) will not be removed by the LMC. At the time of receipt of such property, the ILS PA will affix an EMD property tag with EIN next to the government tag.

If EMD property is returned to a vendor for repair or replacement the LMC will remove the EMD property tag prior to shipment. When the item is returned the LMC will place a new property tag on the property and report the new tag, serial number and other indicative data to the ILS PA. The LMC may use either an MWO or an email message to report the new data.

23.4 Property Records and Reporting

The EMD Project will use the Inventory Logistics and Maintenance (ILM) system to support the property management, control and reporting functions for contractor-acquired and GFP equipment. Property records are created and maintained in this system by the ILS PA. LMCs will be able to do queries and prepare reports using the system. Instructions for ILM use are in Chapter 27 of this document.

Property records will contain a line for each item having an EIN (e.g., workstation monitor) and each of its major components (e.g., network interface cards, RAM chips, graphics card). Refer to the IR Report provided at the time of site installation. **It is the responsibility of the LMC to notify the ILS PA of inventory, configuration, and location changes so that site property records will be maintained current.** See Section 23.5 for specific instructions.

23.4.1 Maintaining Property Records

LMCs will document inventory and configuration changes in local property records within one business day of the change and appropriately notify the ILS PA.

Support documentation for posting changes to property records include the following:

- **Installation Receipt Report -- This report is provided by ILS PA or the installation team at the time equipment is installed and is used to record receipts and changes of equipment at the site. It can be used to update site property records with installed location, date, and name of the person accepting receipts. This report is signed by the LMC to acknowledge receipt of equipment at the site.**
- **Maintenance Work Orders (MWO) -- Prepared by the site LMC to report equipment changes resulting from maintenance or relocation actions (e.g., serial/model changes, component replacements, and relocation/reconfiguration at the site). MWOs are used by the ILS staff to update the ILM property records.**

23.4.2 Reporting Loss, Theft, Damage or Destruction

If EMD or GFP property at the site is lost or stolen, the LMC will notify the site security manager as soon as the theft is discovered and the ILS PA within one business day. The initial

written report will contain all information related to what was lost/stolen, when, where, how, and the circumstances regarding the loss/theft. The final report, due 30 days later, will contain all information required by the EMD Property Management Plan and will be signed by the DAAC Operations Manager. If a report was prepared by local security personnel/police, a copy of the report should be attached to the report.

If equipment is damaged or destroyed through circumstances that indicate inappropriate use, negligence, or improper care, the LMC will likewise notify the ILS PA of the specifics of the damage/destruction and its circumstances via Internet as soon as known.

The ILS PA will review such incidents and report, as required, to the EMD Contract Manager. The ILS PA and the EMD Contract Manager will notify the DCMA Property Administrator of any theft or destruction of EMD property.

23.5 Equipment Relocation

This section provides instructions for equipment relocation within a DAAC (intra-site relocation); between EMD sites or between EMD sites and non-EMD sites (inter-site relocation); to a vendor (off-site relocation); and transfer to outside the contract (external transfer).

23.5.1 Intra-Site Relocation

Requirements for equipment reallocations within the facility or between facilities at the same site will be processed through the LMC to maintain control and accountability of equipment inventories. Local procedures will be developed to ensure that the LMC is aware of all property moves within a DAAC. When completed, the LMC will report the location change via a MWO, EMD Move Change Form Email to the EMD PA.

23.5.2 Inter-Site Relocation

Inter-site relocation requests require a CCR approved by the EMD CCB. Such requests will identify by EIN and equipment description what is to be moved, where and when it is to be moved, and the reason for the relocation. The EMD PA will work with the losing and gaining DAAC to ensure that all property information affected by the transfer is update in ILM. The losing site LMC will coordinate the relocation resources and schedule with the gaining site and the ILS PA. Once completed, the gaining site's LMC will report completion of the relocation to the ILS PA by a MWO or Email. Any loss or damage to the equipment will be reported using the procedure described in Section 23.3.3 when it occurs or is first discovered.

23.5.3 External Transfers

Generally EMD property will not be transferred outside the EMD contract. If LMCs feel they need to transfer EMD property to organizations not support by EMD, contact the EMD PA for guidance. No property will be transferred without the express approval of the EMD PA.

23.6 Inventories and Audits

Annually LMCs will complete a 100 percent physical inventory of controlled EMD property and GFP at the site. This inventory may be conducted in conjunction with the Task 201 annual inventory conducted by the ILS office. EMD personnel responsible for maintaining property records will provide technical assistance but will not be part of any inventory count teams. Inventories will be designed to achieve the following objectives:

- **Verify that accountable equipment is still on hand.**
- **Confirm or determine current locations and custodial responsibility for equipment and material.**
- **Identify unrecorded equipment that qualifies for control.**
- **Locate or identify missing equipment.**
- **Identify unused or under utilized equipment and equipment or material in need of repair or rehabilitation.**

If the annual inventory is done independently of the annual ILS inventory the LMC will, at the time of completion of the site directed inventory, forward a copy of the Inventory Reconciliation Report to the ILS PA. The Inventory Reconciliation Report will be signed by the site's EMD Manager attesting that a 100 percent inventory was conducted and that all equipment is accounted for except for those indicated as not on hand. All discrepancies will be explained.

23.7 Storage

Access to equipment and software in storage will be limited to authorized personnel and controlled by the LMC. LMCs will ensure that storage areas are kept in a clean, orderly manner. Material will be stored on shelves, in bins or drawers as appropriate, and its storage location entered into the site property record. Special storage areas or controls will be provided for items subject to corrosion, humidity, and temperature. LMC should ensure that Electrostatic Discharge (ESD) procedures are used for all items requiring ESD protection. See Section 23.9 for specific ESD instructions. Such items will be inspected semi-annually by the LMC. Serviceable property does not require any special color tag.

23.7.1 Segregation Requirements

Contractor-owned and vendor-loaned property will be segregated from EMD Government-owned property during storage. Unserviceable equipment will also be segregated from serviceable equipment and will be tagged. Unserviceable/reparable equipment will have a yellow tag affixed to it; unserviceable/non-reparable equipment will have a red tag affixed. Unserviceable equipment tags will indicate reason item is unserviceable, date it became unserviceable, parent EIN it came from, and signature of person declaring the item unserviceable.

23.7.2 Stock Rotation

EMD is a task order contract and Task 201 does not provide for the EMD to provide DAAC distribution and other consumables; however, DAAC purchased consumables such as computer tapes, cleaning tapes, CDs, DVD, labels, etc., should be used on a first-in, first-out basis.

23.7.3 Physical Security

EMD property will be stored in secured areas where access will be limited to authorized personnel and controlled by the LMC.

23.8 Packing and Shipping

Prior to shipping centrally reportable equipment to the EDF or other EMD sites, the shipping LMC will notify the gaining LMC of the shipment by email. The email should include the expected shipment date, carrier, shipping document number, estimated weight and cube, number of pieces, shipper and ship-to-address. Prior to shipment, a pre-shipment inspection will be performed to verify the following:

- Correct identification of equipment on packing lists and shipping documents including configurations, serial numbers, number of containers, and ship-to address.
- Adherence to packing, packaging and marking standards.
- Inclusion of appropriately prepared documents within shipping containers.
- The gaining LMC will notify the EMD PA via Email or phone when the item shipped has been received.

EMD property being shipped from vendors and the EDF will be shipped to the DAAC facility to the attention of the DAAC Local Maintenance Coordinator. Local policy at some sites may require delivery to a site central receiving point. In such cases, written procedures will be developed between the LMC and the site's central receiving office regarding notification of receipts, documentation required, and provisions for local delivery to the DAAC facility. The delivery of EMD equipment to site central receiving points versus direct delivery to the DAAC facility will be determined based on agreements and procedures established between the host facility and the DAAC.

23.9 Electrostatic Discharge (ESD) Program

An Awareness program on Electrostatic Discharge (ESD) and operations and maintenance practices will be followed to eliminate ESD hazards to HW, SW, or people. Procedures for the program will be developed using DOD-HDBK-263 and DOD-STD-1686 as guides. Included in the program will be policies and procedures for prevention and safe dissipation of static electricity: Workplace common grounding requirements; and parts handling and protection when in storage, outside the manufacturer's protective packaging, and being readied for installation or removal and packaging for delivery. ESD hazard awareness and prevention will be an appropriate part of the training and certification process of EMD operations and maintenance personnel. All ESD hazard awareness and prevention requirements will be passed through as requirements to all operations or maintenance subcontractors.

24. Installation Planning

24.1 Overview

Installation Planning is an integral part of the EMD Task Order Delivery Process. When an EMD Task Order is received from NASA the installation planning cycle begins. The ILS Installation Coordinator in conjunction with hardware engineering will review current, hardware diagram. The Installation CCRs provide the detailed planning required by installation teams and the sites to make final preparation for installing Release equipment. Close coordination with the DAAC is required to ensure that the projected plans meet DAAC requirements. While site surveys are not required, one may be performed based on the complexity of the task described by the Task Order.

24.2 Responsibilities

Installation planning and coordination is the responsibility of the ILS Installation Coordinator, who is part of the Integrated Logistics Support (ILS) Office. Using information from telephone calls or site surveys, the Installation Coordinator prepares the Installation CCRs and coordinates actions needed to prepare for and conduct the installations. DAAC personnel support the Installation Coordinator by working to prepare DAAC specific plan for each Task Order. They also ensure that site preparations/coordination are completed on schedule and work with EDF installation technicians to complete the installation of hardware.

24.3 Process Description

DAAC information, plus design and equipment specifications, is used to provide a preliminary plan for the placement of systems at the DAACs. DAAC engineering staffs review this information and provide requested changes, which are incorporated into the Installation CCRs.

Prior to the installation of hardware, a PSR or an Installation CCR is produced to identify the planned placement of hardware in the facility and how the hardware will be configured and networked, and to identify site preparations necessary to support the installation. Installation teams use the Installation CCR to install the systems and networks. Within three weeks following the installation, the Installation Coordinator will update the hardware diagram to reflect the as-installed configuration at the site. These diagrams are submitted to the EMD CCB and, when approved, become part of the operations baseline for the site and are available for viewing on the web. It is the responsibility of the LMC to notify the Installation Coordinator as changes to the baseline documentation occur. Table 24.3-1 shows the Installation Planning Activity Outline.

Table 24.3-1. Installation Planning Activity Outline

Step	Responsible Person	ACTION
1	Installation Coordinator	In conjunction with the DAAC staff prepares an installation CCR.
2	Installation Coordinator	Briefing with DAAC SE and coordinate schedule.
3	Installation Team	Install hardware based on Installation schedule.
4	Installation Team	Burn in and test new hardware.
5	Installation Coordinator	Update information to the CCR and create an As-Built document of the Hardware Diagram.
6	Installation Coordinator	Send the As-Built document to DAAC Liaison while creating a CCR for the CCB.
7	Installation Coordinator	Prepare CCR and board the new hardware diagram.

24.4 Maintenance of Hardware Diagrams

Hardware diagrams reflect the as-installed configuration. The hardware diagrams are maintained by the hardware engineering staff. As changes to these diagrams occur (e.g., relocation of equipment within the site), the LMC will inform the ILS Installation Coordinator or responsible hardware engineer of changes. The Installation Coordinator or responsible hardware engineer will update the appropriate documents and create a CCR to present the changed documents to the EMD CCB to update the documents.

25. COTS Training

This chapter outlines the procedures for DAACs to request COTS HW and SW training from the EDF. The EMD program has limited training funds to provide training to DAAC and EDF personnel. Operations Contractors at DAACs are generally not eligible to use these training dollars. These funds are reserved for Raytheon and Raytheon subcontractors. The COTS training funds are generally not used to fund travel: exceptions will be made on a case-by-case basis.

The Activity Checklist in Table 25.1-1 outlines the role of the COTS ILS Training Coordinator and the section number where details for performing the tasks can be found.

Table 25.1-1. COTS Training - Activity Checklist

Task	Section
Requesting COTS Training	25.1
Coordinating COTS Training	25.2
Canceling/Rescheduling COTS Training	25.3
Contractor COTS Training Funds Accounting	25.4

25.1 Requesting COTS Training

DAAC Leads will submit training requests to the Senior DAAC lead and the COTS ILS Training Coordinator at the same time. It is understood that unless the Senior DAAC lead specifically disapproves the training it is considered approved. The COTS ILS Training Coordinator will wait two business days and then process the training request. The request for training should be sent at least 30 days prior the requested training date.

The following steps outline the process:

- a. The training request will contain the following information:
 1. Student name(s) and DAAC representation.
 2. Training need.
 3. COTS course requested.
 4. Dates preferred.
 5. Price of COTS course.
 6. Manager approving purchase of training.
 7. Course location.
 8. Duration of course.

- b. The COTS ILS Training Coordinator verifies the training request meets the following criteria:
 - 1. Meets the appropriate company/location criteria.
 - 2. Relates to COTS hardware or software in the EMD system design.
 - 3. Is cost effective and within budget constraints.
- c. COTS ILS Training Coordinator determines the proposed training details, including the following:
 - 1. Training vendor.
 - 2. Individual or group training, based on cost effectiveness.
 - 3. On-site or off-site class location.
 - 4. Available vendor training dates.
- d. The ILS Manager (prior to procurement) receives the training request (forwarded by the COTS ILS Training Coordinator) for approval. The ILS Manager will either approve or deny the request.
- e. COTS ILS Training Coordinator maintains record of approval of training purchase.

25.2 Coordinating COTS Training

After the ILS Manager approves the request for COTS training, the COTS ILS Training Coordinator will work with the COTS procurement office to schedule and procure the training. The procedures to purchase training are accomplished in the following order:

- a. When approved, the COTS ILS Training Coordinator submits all training details to the COTS Purchasing Manager.
- b. The COTS ILS Training Coordinator orders training from the vendor.
- c. Purchasing Manager processes the purchase order and provides a copy to the COTS ILS Training Coordinator.
- d. The COTS ILS Training Coordinator forwards the purchase order to the vendor to reserve training.
- e. The COTS ILS Training Coordinator generates a notice to students that includes training vendor, course, date(s), and other relevant information.
- f. For on-site training, at the EDF, the COTS ILS Training Coordinator makes necessary arrangements for classroom space and equipment configuration; coordinates use of any operational equipment required for course, with on-going operations; forwards site location details to vendor instructor.
- g. Prior to Group COTS training, the COTS ILS Training Coordinator provides students with a COTS Training Evaluation Form, which evaluates the effectiveness of the course. In cases when COTS training is found to be substandard or ineffective, the COTS Training Coordinator contacts the ILS Manager, and DAAC Senior Lead so they come to a consensus as to whether or not to pursue compensation for the training.

- h. Depending upon the decision rendered, the COTS ILS Training Coordinator seeks refund, replacement training seat, or training credit from the vendor.

25.3 Canceling/Rescheduling COTS Training

COTS training vendors generally withhold all or part of registration fees for course seats canceled too close to the start date of training. The deadline for cancellation without penalty varies between vendors, **but the maximum deadline is three weeks prior to course start date.** In order to preserve EMD COTS training funds, any cancellations of COTS training by EMD personnel must be made before three weeks of the start date to avoid these financial penalties.

- If student(s) need to cancel within this three-week deadline, the DAAC Lead will be responsible for substituting an equally qualified individual to attend the course, and for notifying the COTS ILS Training Coordinator to ensure proper record keeping and registration with the vendor.

25.4 Contractor COTS Training Funds Accounting

While the coordination and purchasing responsibilities for COTS training fall primarily with the ILS Manager. The allocation of training dollars will be approved by COTS HW/SW Maint & Operations Manager to ensure the training dollars are spent in the most efficient and effective manner for the EMD program.

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26. Science Software Integration and Test (SSI&T)

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27. Inventory Logistical Management (ILM)

27.1 ILM [Inventory, Logistics and Maintenance (ILM) Manager]

ILM helps the maintenance and operations staffs at the EDF and DAACs maintain records that describe all inventory items, as well as their EIN structures, repair histories, and locations. The system keeps chronological histories (a record of the transactions) of installation, relocation, movement, shipment and archiving of inventory items. ILM is used by the Property Management, Maintenance, and Logistics teams in managing the tangible property of NASA's EOSDIS project. In addition, this system also manages COTS software license information, such as the Rights-to-use purchased, allocated, and remaining.

ILM is a customized application of the Remedy Action Request System (ARS). The customizations adapt the product to the ILS processes used for EMD. ILM takes into account how business rules and logistics concepts are applied on the EMD project. This document does not address these considerations in detail, but the following general introduction should help.

Each inventory item is identified by a unique Equipment Inventory Number (EIN). In the case of hardware items, an EIN corresponds to a silver sticker affixed to the item. Some of the items are shipped to sites and installed. Others such as consumables are issued but not installed. After a period, some items may be transferred to other locations or relocated for use with other parent machines. Items are archived when no longer needed or serviceable.

For tracking and auditing purposes, inventory items – especially hardware – are allocated to “parent” machines. These parent and child relationships are called an EIN structure. EIN structures have active and inactive dates that establish the timeframe during which the pairing is in effect.

Table 27.1-1 summarizes the operator functions that ILM supports, and table 27.1-2 describes ILM user groups and what privileges each group have. The sections that follow present how to use Remedy features that were customized for EMD inventory, logistics, and maintenance management. In addition, these sections also have detail instructions on how to perform functions designed for each individual form. For more information on Remedy's Action Request System, refer to Remedy help manual.

Table 27.1-1. Common Operator Functions Performed with ILM

Operating Function	GUI	Section	Description	When and Why to Use
Remedy Overview	Navigating Remedy User Tool Defining Search Criteria ILM Predefined Reports	27.2.1 27.2.2 27.2.3	Overview of Remedy User Tool.	To Navigate, search, and run ad hoc and predefined reports.
Property Management	ILM-EIN ILM-EIN Structure ILM-EIN Transactions ILM-Transaction Log ILM-OEM Parts ILM-Vendor-MFR ILM-HwSw Code ILM-Status Codes ILM-Maint Contract ILM-Sites ILM-Inventory Location	27.3.1 27.3.2 27.3.3 27.3.4 27.3.5 27.3.6 27.3.7 27.3.8 27.3.9 27.3.10 27.3.11	Maintain information about accountable property items, their product structures, and inter-relationships.	To maintain information that specifies the identity, source, location, transfer, relocation, and installation of procured inventory items.
Property Maintenance	ILM-MWO ILM-MWO Line Item	27.4.1 27.4.2	Manage information for required maintenance repairs.	To track and monitor maintenance activities
License Management	ILM-License Product ILM-License Entitlement ILM-License ILM-License Mapping ILM-Additional Host	27.5.1 27.5.2 27.5.3 27.5.4 27.5.5	Manage entitlements, licenses, and license allocations for licensed COTS software.	To track the receipt, movement, and consumption of software licenses and their associated rights-to-use.
System Administrator	ILM-System Parameters User Remedy Admin Tool Database Special Constraints Event and Error Messages	27.6.1 27.6.2 27.6.3 27.6.4 27.6.5 27.6.6	Manage AR System	Uses by Remedy Administrator to administrate Remedy Tool.

Table 27.1-2. Remedy-ILM Groups Description (1 of 3)

Group Name	Description	Access
ILMAdmin	Full privileges to all operator and system administrator functions within ILM	ALL ILM related Forms
ILMProperty	To maintain information that specifies the identity, source, location, transfer, relocation, and installation of procured inventory items.	<ul style="list-style-type: none"> ◆ ILM-EIN (Change) ◆ ILM-EIN Transactions (Change) ◆ ILM-Transaction Log (View) ◆ ILM-Vendor-MFR (Change) ◆ ILM-HwSw Code (View) ◆ ILM-OEM Parts (Change) ◆ ILM-Status Codes (View) ◆ ILM-Maint Contract (View) ◆ ILM-Sites (View) ◆ ILM-Inventory Location (View) ◆ ILM-MWO (Change) ◆ ILM-MWO Line Item (Change) ◆ ILM-License Product (View) ◆ ILM-License Entitlement (View) ◆ ILM-License (View) ◆ ILM-License Mapping (View) ◆ ILM-Additional Host (View)
ILMContract	Maintains maintenance contract purchased for EMD Hardware and COTS software.	<ul style="list-style-type: none"> ◆ ILM-EIN (Change - only to the Maint Contract ID, Maint Exp Date, and Maint Vendor on this form) ◆ ILM-EIN Transactions (View) ◆ ILM-Transaction Log (View) ◆ ILM-Vendor-MFR (View) ◆ ILM-HwSw Code (View) ◆ ILM-OEM Parts (View) ◆ ILM-Status Codes (View) ◆ ILM-Maint Contract (Change) ◆ ILM-Sites (View) ◆ ILM-Inventory Location (View) ◆ ILM-MWO (View) ◆ ILM-MWO Line Item (View) ◆ ILM-License Product (View) ◆ ILM-License Entitlement (Change - only to the Maint Contract ID and Maint Exp Date on this form) ◆ ILM-License (View) ◆ ILM-License Mapping (View) ◆ ILM-Additional Host (View)

Table 27.1-2. Remedy-ILM Groups Description (2 of 3)

Group Name	Description	Access
ILMlicuser	License management data update privileges for software license administrators	<ul style="list-style-type: none"> ◆ ILM-EIN (View) ◆ ILM-EIN Transactions (View) ◆ ILM-Transaction Log (View) ◆ ILM-Vendor-MFR (View) ◆ ILM-HwSw Code (View) ◆ ILM-OEM Parts (View) ◆ ILM-Status Codes (View) ◆ ILM-Maint Contract (View) ◆ ILM-Sites (View) ◆ ILM-Inventory Location (View) ◆ ILM-MWO (View) ◆ ILM-MWO Line Item (View) ◆ ILM-License Product (Change) ◆ ILM-License Entitlement (Change) ◆ ILM-License (Change) ◆ ILM-License Mapping (Change) ◆ ILM-Additional Host (Change)
ILMmaint	Maintenance management data update privileges for EDF's Maintenance Coordinator	<ul style="list-style-type: none"> ◆ ILM-EIN (View) ◆ ILM-EIN Transactions (View) ◆ ILM-Transaction Log (View) ◆ ILM-Vendor-MFR (View) ◆ ILM-HwSw Code (View) ◆ ILM-OEM Parts (View) ◆ ILM-Status Codes (View) ◆ ILM-Maint Contract (View) ◆ ILM-Sites (View) ◆ ILM-Inventory Location (View) ◆ ILM-MWO (Change) ◆ ILM-MWO Line Item (Change) ◆ ILM-License Product (View) ◆ ILM-License Entitlement (View) ◆ ILM-License (View) ◆ ILM-License Mapping (View) ◆ ILM-Additional Host (View)
ILMdaacAdmin	Full privileges to all operator and system administrator functions within ILM at a site.	ALL Remedy-ILM related forms.

Table 27.1-2. Remedy-ILM Groups Description (3 of 3)

Group Name	Description	Access
ILMdaacMaint	Maintenance management data update privileges for Local Maintenance Coordinator at the site.	<ul style="list-style-type: none"> ◆ ILM-EIN (View) ◆ ILM-EIN Transactions (View) ◆ ILM-Transaction Log (View) ◆ ILM-Vendor-MFR (View) ◆ ILM-HwSw Code (View) ◆ ILM-OEM Parts (View) ◆ ILM-Status Codes (View) ◆ ILM-Maint Contract (View) ◆ ILM-Sites (View) ◆ ILM-Inventory Location (View) ◆ ILM-MWO (Change) ◆ ILM-MWO Line Item (Change) ◆ ILM-License Product (View) ◆ ILM-License Entitlement (View) ◆ ILM-License (View) ◆ ILM-License Mapping (View) ◆ ILM-Additional Host (View)
ILMquery	ILM data query privileges only.	<ul style="list-style-type: none"> ◆ ILM-EIN (View) ◆ ILM-EIN Transactions (View) ◆ ILM-Transaction Log (View) ◆ ILM-Vendor-MFR (View) ◆ ILM-HwSw Code (View) ◆ ILM-OEM Parts (View) ◆ ILM-Status Codes (View) ◆ ILM-Maint Contract (View) ◆ ILM-Sites (View) ◆ ILM-Inventory Location (View) ◆ ILM-MWO (View) ◆ ILM-MWO Line Item (View) ◆ ILM-License Product (View) ◆ ILM-License Entitlement (View) ◆ ILM-License (View) ◆ ILM-License Mapping (View) ◆ ILM-Additional Host (View)

27.2 Remedy User Tool Overview

27.2.1 Navigating Remedy User Tool

Invoking Remedy-ILM from a PC

To start Remedy User,

- Click Start → Programs → Action Request System → Remedy User
- Double-click on a Remedy User icon on the desktop, if one exists.

The Remedy User screen is displayed. Enter user Id and password.

Once logged into Remedy User, user can open a form. To view a list of all available forms, select **File → Open**, or select the Open icon, the first icon in the toolbar. This display the complete list of forms to which the user have access (see Figure 27.2.1-1).

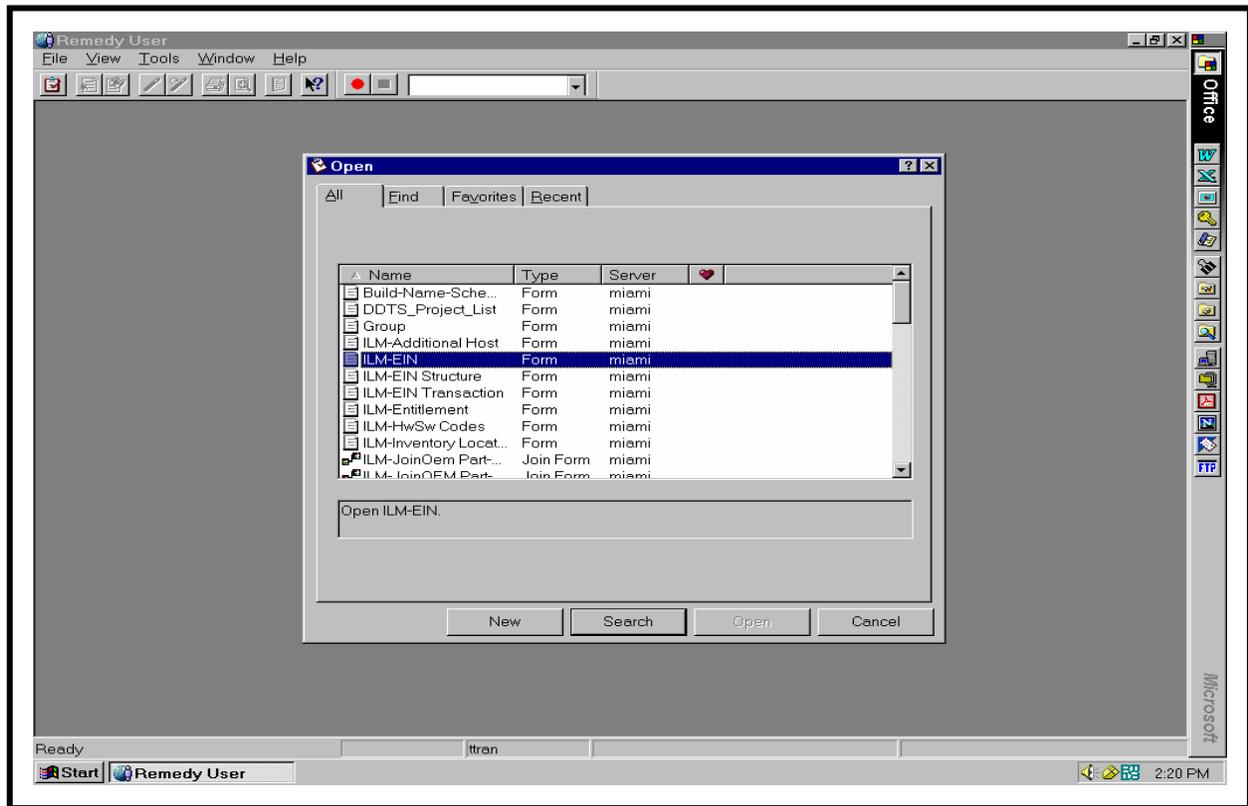


Figure 27.2.1-1. Open GUI

- ◆ To view a shorter list of forms, select the **Find, Favorites, and Recent** tabs in the Open dialog box.
 - ◆ **Find** – Lists only the requested forms.
 - ◆ **Favorites** – Lists only the forms designated as favorites.
 - ◆ **Recent** – Lists only the recently used forms.
- ◆ Remedy application is a Graphical User Interface (GUI). The GUI is very similar to any Microsoft application. It has a title bar, menu bar, tool bar, and status bar.
 - ◆ Title Bar – Displays form name and mode.
 - ◆ Menu Bar – The menus File, Edit, View, Tools, Actions, Window, and Help are standard AR System menus. Any other menus are those customized for a specific form. For instance, the ILM-EIN form has an additional menu selection called ILM Reports.
 - ◆ Tool Bar – Displays Remedy tool bar icons.
 - ◆ Status Bar – Displays form status, logged on user and server name
- ◆ Remedy application is case-sensitive. The convention in Remedy-**ILM** is that most of the data are in UPPER CASE. One exception is **ECS Name**, which holds a host's name. To follow the EMD naming convention, some of the ECS Name will be in lower case and some will be in upper case.
- ◆ Pressing the <ENTER> key after each entry **DOES NOT WORK**. Use either the <TAB> key or the mouse to move to the next field.
- ◆ Each form can be open in one of two modes:
 - ◆ **New** – To create a new record
 - ◆ **Search** – To search for an existing record(s).
 - ◆ An easy way to change a form's mode to New or Search is to click the **New Request** or **New Search** icon in the toolbar.
- ◆ Field Labels Convention
 - ◆ **Required Fields** – required fields have labels in **bold type**. Except in cases where field values are added by default or automation, user must enter information in a required field. Otherwise, an attempt to save the request is rejected by the AR system.
 - ◆ **Optional Fields** – Optional fields have labels in regular type. Though this information is not always required to save the record, optional data helps to resolve, track, and reference a record.
 - ◆ **System-generated Fields** – System-generated fields have labels in *italicized type*. User does not enter information in these fields when saving a request, as information in these fields is automatically generated by the system.

27.2.2 Defining Search Criteria

27.2.2.1 Searching by Example

The easiest way to perform a search is to have a form in Search mode, fill one or more specific field values to search for, then click search. Remedy performs the search and displays the matching records. User may specify values for as many fields as needed. The more fields are filled, the more specific the search becomes. Data specified as search criteria is treated as a logical AND. Figure 27.2.2.1-1 displays an example of a search by example. This search will select all records where the manufacturer is SGI, AND the hardware and software code is Hardware (H), AND the Location is GSFC. Table 27.2.2.1-1 describes relational operators that can be used in the query window for Search by Example.

The screenshot displays the 'Remedy User - [ILM-EIN [Search]]' application window. The title bar includes standard window controls. The menu bar contains 'File', 'Edit', 'View', 'Tools', 'Actions', 'ILM Reports', 'Window', and 'Help'. A toolbar with various icons is located below the menu bar. The main content area is titled 'Search ILM-EIN' and features a search icon and a dropdown menu set to 'Search', with an 'Advanced' link. The form is organized into several sections: 'EIN' with fields for 'EIN', 'Parent EIN', and 'ECS Name'; 'Part Information' with fields for 'Serial No', 'Part No', 'Description', 'MFR', 'Hw-Sw Code' (set to 'H'), and 'Mod_Ver', along with an 'Add New Part' button; and 'Location & Purchasing Info' with fields for 'Location' (set to 'GSFC'), 'Building', 'Room', 'Item Status', 'Vendor ID', 'PO Number', 'Cost', 'Quantity', 'Receive Date', 'Installation Date', and 'Audit Date'. The status bar at the bottom shows 'Ready' and the names of the current user, 'ltran', and the session, 'miami'.

Figure 27.2.2.1-1. Search by Example

Table 27.2.2.1-1. Relational Operators Used in the Query Window

Operator	Action
<	Matches contents that are <i>less than</i> the value.
>	Matches contents that are <i>greater than</i> the value.
!=	Matches contents that are <i>not equal</i> to the value.
<=	Matches contents that are <i>less than or equal</i> to the value.
>=	Matches contents that are <i>greater than or equal</i> to the value.
=	Matches contents that are <i>equal</i> to the value.

NOTE: Stopping a Search – While the system is performing the search, user can stop the search by clicking **Stop Search** in the Active Search dialog.

27.2.2.2 Using the Advanced Search Bar

Using the Advanced Search Bar is a second method of specifying search criteria.

To display the Advanced Search Bar, click on the **Advanced** button in the search form banner, or choose **View -> Advanced Search Bar**. The bar displays at the bottom of the form. With the Advanced Search Bar method, the search criteria are defined in a statement, rather than in field value examples. The basic syntax for building a statement is:

Field_Label Relational_Operation Field_Value

- ◆ Field_Label must be enclosed with single quote (‘).
- ◆ Field_Value must be enclosed with double quote (“).

1. Enter a Field Label

Use one of the following ways to enter a field label in the Advanced Search Bar:

- ◆ Click on a field label in the form. The field label displays in the Advanced Search Bar, enclosed in single quotes.
- ◆ Select the field name from the **Fields** menu. The name displays in the Advanced Search Bar, enclosed in single quotes.
- ◆ In the Advanced Search Bar, type the field label between single quotes.

2. Add a Relational Operator

- ◆ Click on the appropriate operator from the palette of buttons in the Advanced Search Bar area, or type the operator. Table 27.2.2.2-1 lists and describes the action each operator does. Table 27.2.2.2-2 describes the use of wildcard symbols.

3. Enter a Field Value

The field value can be text, a number, or a keyword (Table 27.2.2.2-3 defines some of Remedy Keywords definition). To add a field value in the Advanced Search Bar, use one of the following methods:

- ◆ Type the field value in the Advanced Search Bar enclosed the value with double quotes.
- ◆ Select the field value from the **Fields -> Selection Values** menu.

4. Click on the Search icon or button to start the search.

Once the search criteria are specified, user may display, modify, or generate reports from the results of the search.

Figure 27.2.2.2-1 illustrates how to use the Advanced Search Bar. This example selects all records where ECS Name contains the word “MOP” anywhere in the ECS Name and location equal to EMOSG.

The screenshot shows a web application window titled "Remedy User - [ILM-EIN (Search)]". The window has a menu bar with "File", "Edit", "View", "Tools", "Actions", "ILM Reports", "Window", and "Help". Below the menu bar is a toolbar with various icons. The main content area is titled "Search ILM-EIN" and has a "Search" button and a "Advanced" dropdown menu. The search form includes several input fields: "EIN", "Parent EIN", "ECS Name", "Serial No", "Part No", "Description", "MFR", "Hw-Sw Code", "Mod_Ver", "Location", "Building", "Room", "Item Status", "Vendor ID", "PO Number", "Cost", and "Quantity". There is also an "Add New Part" button. At the bottom of the search form, there is a "Search Criteria" field containing the text: "ECS Name' LIKE '%MOP%' AND 'Location' = 'EMOSG'". To the right of this field is a "Fields" dropdown menu. The status bar at the bottom of the window shows "Ready" and "ltran miami".

Figure 27.2.2.2-1. Using the Advanced Search Bar

Table 27.2.2.2-1. Operators Used in the Advanced Search Bar

Operator	Action
AND &&	Logical AND of the result of two conditions (the result is true only if both conditions are true). For example, 'MFR' = "SGI" AND 'Location' = "PVC" finds all SGI's equipment located in PVC. You can use the symbol && instead of the word AND.
OR 	Logical OR of the result of two conditions (the result is true if either condition is true). For example, 'MFR' = "SGI" OR 'MFR' = "SUN" finds all SGI and SUN equipment. You can use the symbol instead of the word OR.
NOT !	Negates the condition that follows (if the condition is false, the result is true). For example, NOT 'Room' = "1073" finds all entries that are not in room 1073. You can use the symbol ! instead of the word NOT.
LIKE	Performs a pattern search. For example, 'ECS Name' LIKE "g0%" finds all entries where the ECS Name starting with g0.
+	<ul style="list-style-type: none"> ◆ Adds two integer or real values. ◆ Adds an integer interval to a time value. ◆ Concatenates two character strings.
-	<ul style="list-style-type: none"> ◆ Subtracts two integer or real values. ◆ Subtracts two time values. ◆ Subtracts an integer interval from a time value.
*	Multiplies two integer or real values.
/	Divides two integer or real values.
%	Supplies the modulo of two integer values (the remainder of a division of the values).
<	Matches contents that are less than the value.
>	Matches contents that are greater than the value.
!=	Matches contents that are not equal to the value.
<=	Matches contents that are less than or equal to the value.
>=	Matches contents that are greater than or equal to the value.
=	Matches contents that are equal to the value.

Table 27.2.2.2-2. Wildcard Symbols

Wildcard	Action
%	Matches any string of 0 or more characters. For example, 'ECS Name' = "%dms%" matches all ECS Name having dms anywhere in the ECS Name.
_	(Underbar). Matches any single character. For example, B_b matches Bab, Bob, and Bub.
-	(Hyphen). Indicates a range. Always use within brackets ([]).
[]	Use to match any single character within a specified range or set. For example, [a-f] matches the range of characters a through f while [abcf] matches the set of characters a, b, c, or f.
[^]	Matches any single character <i>not</i> within a specified range or set. For example, [^a-f] matches all characters except the range a through f while [^abcf] matches all characters except a, b, c or f.

Table 27.2.2.2-3. Using Keywords

Keyword	Action
\$DATE\$	Current date.
\$TIME\$	Current time.
\$TIMESTAMP\$	Current date and time.
\$NULL\$	Name of the user who is currently logged in.
\$USER\$	Lacking a value.

27.2.3 ILM Predefined Reports

ILM Predefined reports are reports that provide specific ILM information. Table 27.2.3-1 lists and defines these reports. This table also list the section numbers where the instruction to generate these reports can be found.

Table 27.2.3-1. ILM Pre-Defined Reports (1 of 2)

Report Type	Report Description	Table No.
<i>Inventory Management</i>		
Install/Receipt Report	A receipt describing an operator-specified EIN item together with all of its associated components order by EIN number.	27.3.1.1-2
Installation Report	A receipt describing an operator-specified EIN item together with its components having status "I" (for installed).	27.3.1.1-2
Parent EIN Report	Provides a listing of only Parent items.	27.3.1.1-2
Parent EIN and total System Cost Report	Provides a listing of only Parent items and the total system cost for each Parent.	27.3.1.1-2
Inventory Report	Provides an ASCII formatted report identifying the inventory items by Parent EIN according to the operator-specified criteria.	27.3.1.1-2
Quarterly Property Management Report	Provides a list of contractor-acquired equipment items by quarter, sorted by Mfr and product description.	27.3.1.1-2
Purchase Order Cost Report	Provides a list of EINs and their cost associated with an operator-specified purchase order.	27.3.1.1-2
Cost – Selected ECS Managed Property	Provides the quantity and total cost of operator-selected EINs, grouped by type of inventory (Hardware, Software, Consumable, i.e.).	27.3.1.1-2
EIN Transaction History	A list of the transactions processed for operator-specified items during an operator-specified timeframe, sorted by EIN number and "from" location	27.3.1.1-2
Spare Equipment	A list of spare equipment sorted by EIN number.	27.3.1.1-2
ECS Shipment Report	Provides a listing of items that were shipped within an operator-specified time frame.	27.3.4-2
<i>Maintenance Management</i>		
Maintenance Work Order Verification Report	A full description of operator-selected work orders and the items undergoing maintenance action that they cover.	27.4.1-3
Maintenance Contract Report	Provides a list of operator-specified maintenance contract and all the associated items the contract covers.	27.3.9-2
RMA Work Order Report	Provides an ASCII formatted spreadsheet formatted report with embedded formulas for RMA data.	27.4.1-3

Table 27.2.3-1. ILM Pre-Defined Reports (2 of 2)

Report Type	Report Description	Table No.
License Management		
License Entitlements Status Report	Lists the status of current license entitlements for licensed software products, sorted by software product, version, and license type.	27.5.2-2
License Allocations by Product Report	Lists license allocations for licensed software products, sorted by product, version, and host name.	27.5.3-3
License Allocations by Host Report	Lists license allocations, sorted by host name and ECS part alias.	27.5.3-3

27.3 Property Management

Remedy provides the maintenance and operations staffs at the EDF and the DAACs the capability to maintain inventory records, including EIN structures. Property Administrators can submit new records, modify existing ones, and perform transactions that capture installation, relocation, movement, shipment, and archive activities. These transactions are logged for historical purposes. The following sections will describe these functions in detail.

27.3.1 ILM-EIN GUI

The ILM-EIN form (Figures 27.3.1-1 through 27.3.1-5) is used for creating, viewing or modifying all EMD inventory records. In addition, this form also allows the Property Administrator to create and modify EIN structures via the Parent EIN field. Other ILM groups may view and perform reports on this form. The following tables provide detail instructions to perform the following functions:

- ◆ Adding New Inventory Item (Table 27.3.1-2)
- ◆ Adding New Component to an EIN structure (Table 27.3.1-3)
- ◆ Modifying EIN record (Table 27.3.1-4)
- ◆ Run ILM-Predefined reports (Table 27.3.1-5)

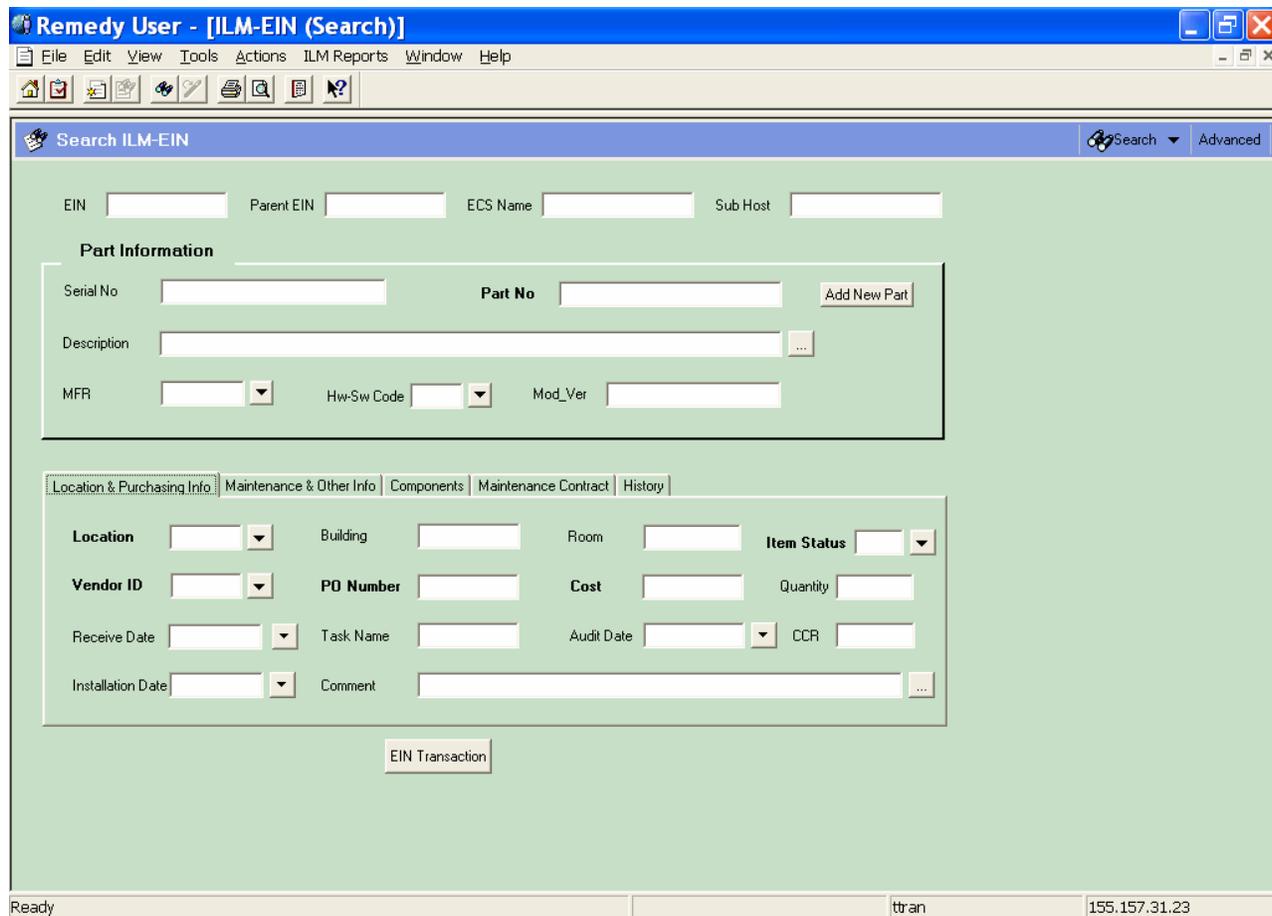


Figure 27.3.1-1. ILM-EIN (Part Info and Location & Purchasing Info) GUI

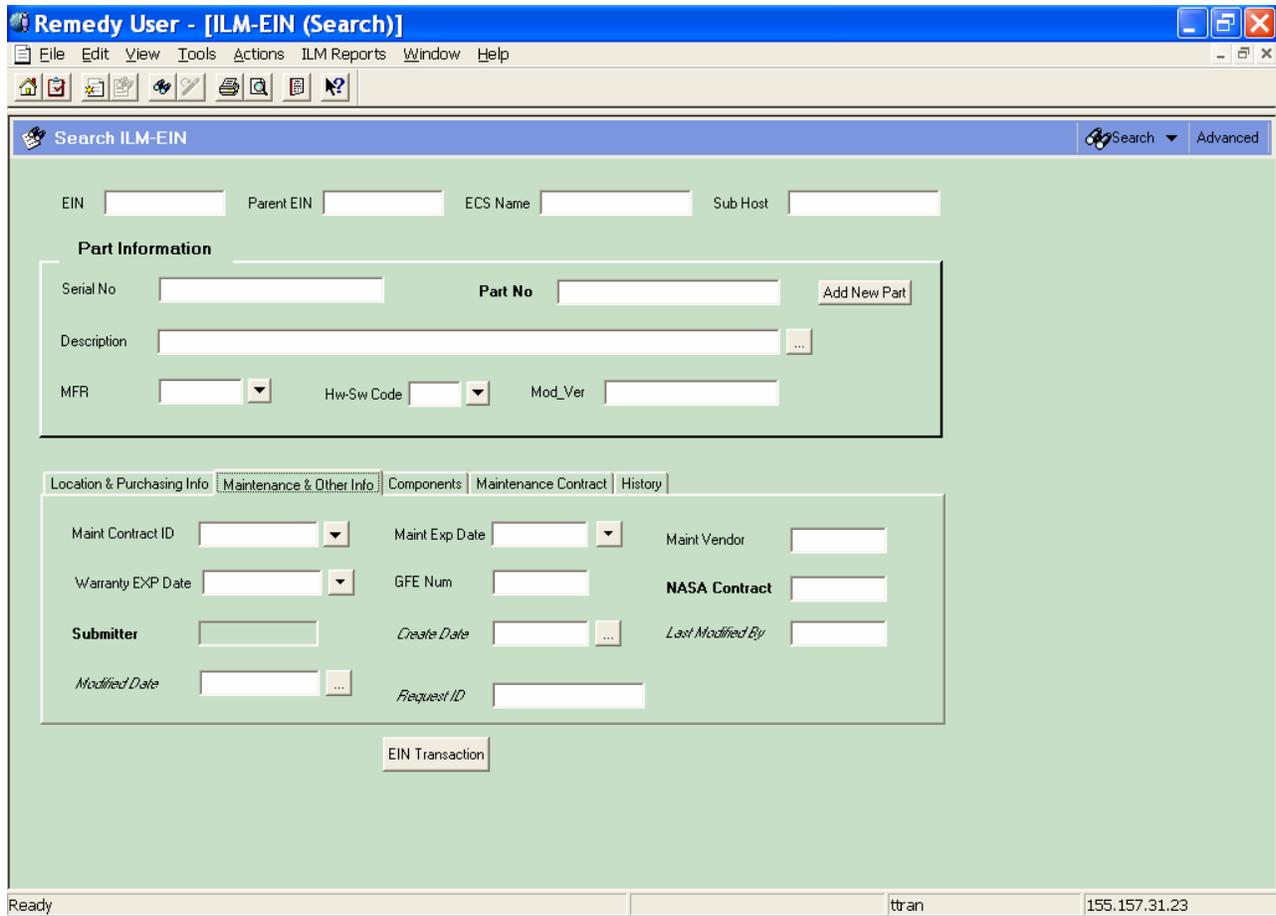


Figure 27.3.1-2. ILM-EIN (Maintenance & Other Info.) GUI

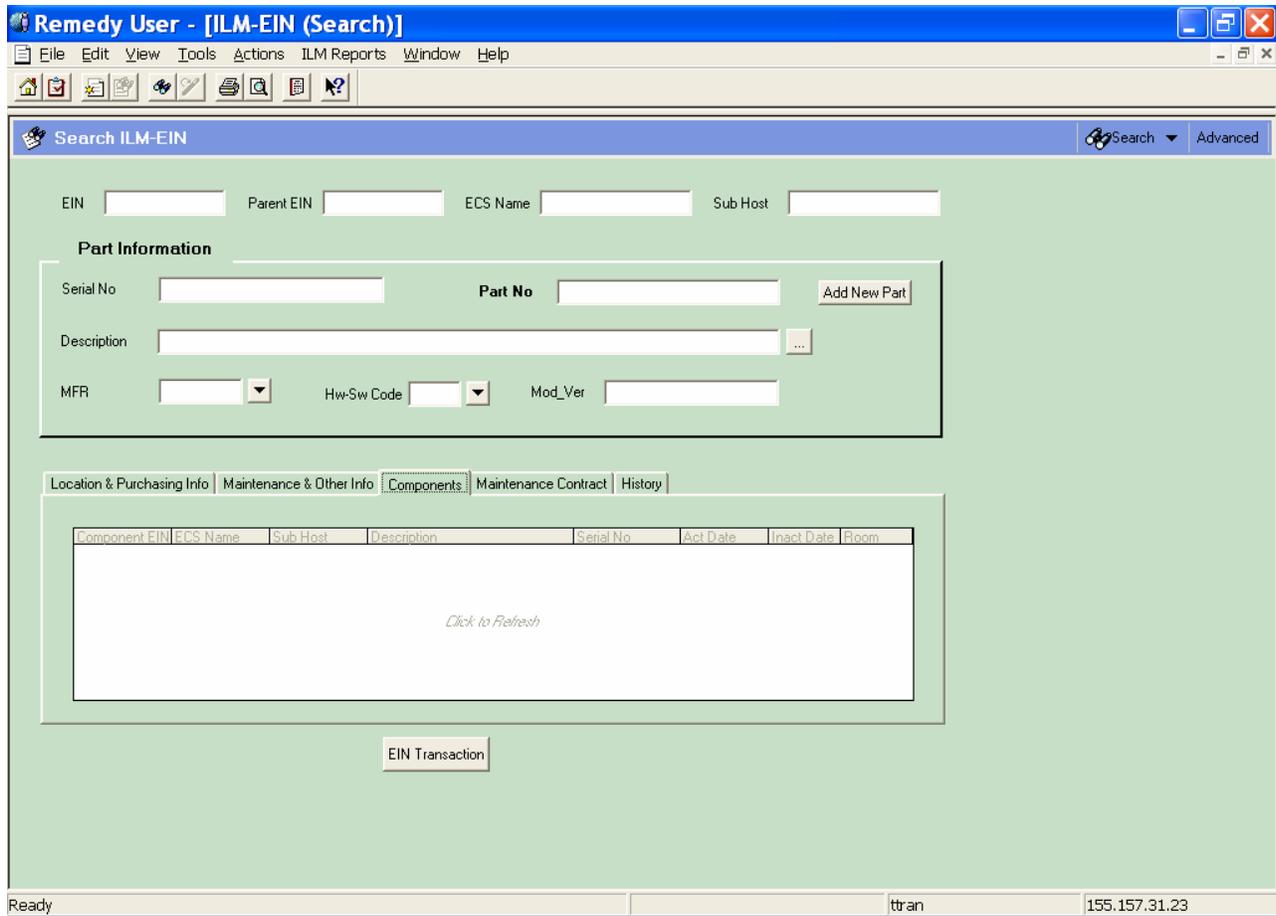


Figure 27.3.1-3. ILM-EIN (Components) GUI

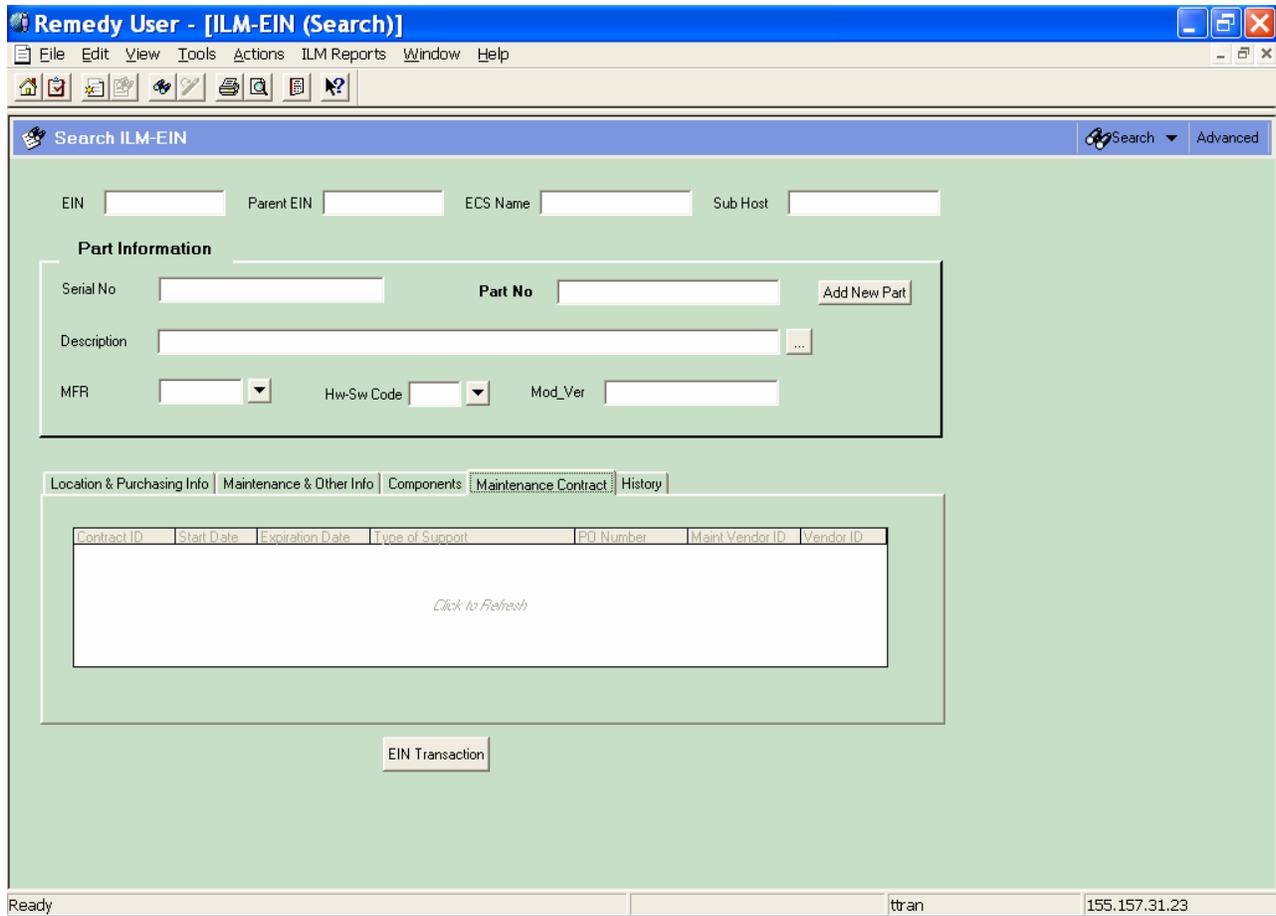


Figure 27.3.1-4. ILM-EIN (Maintenance Contract) GUI

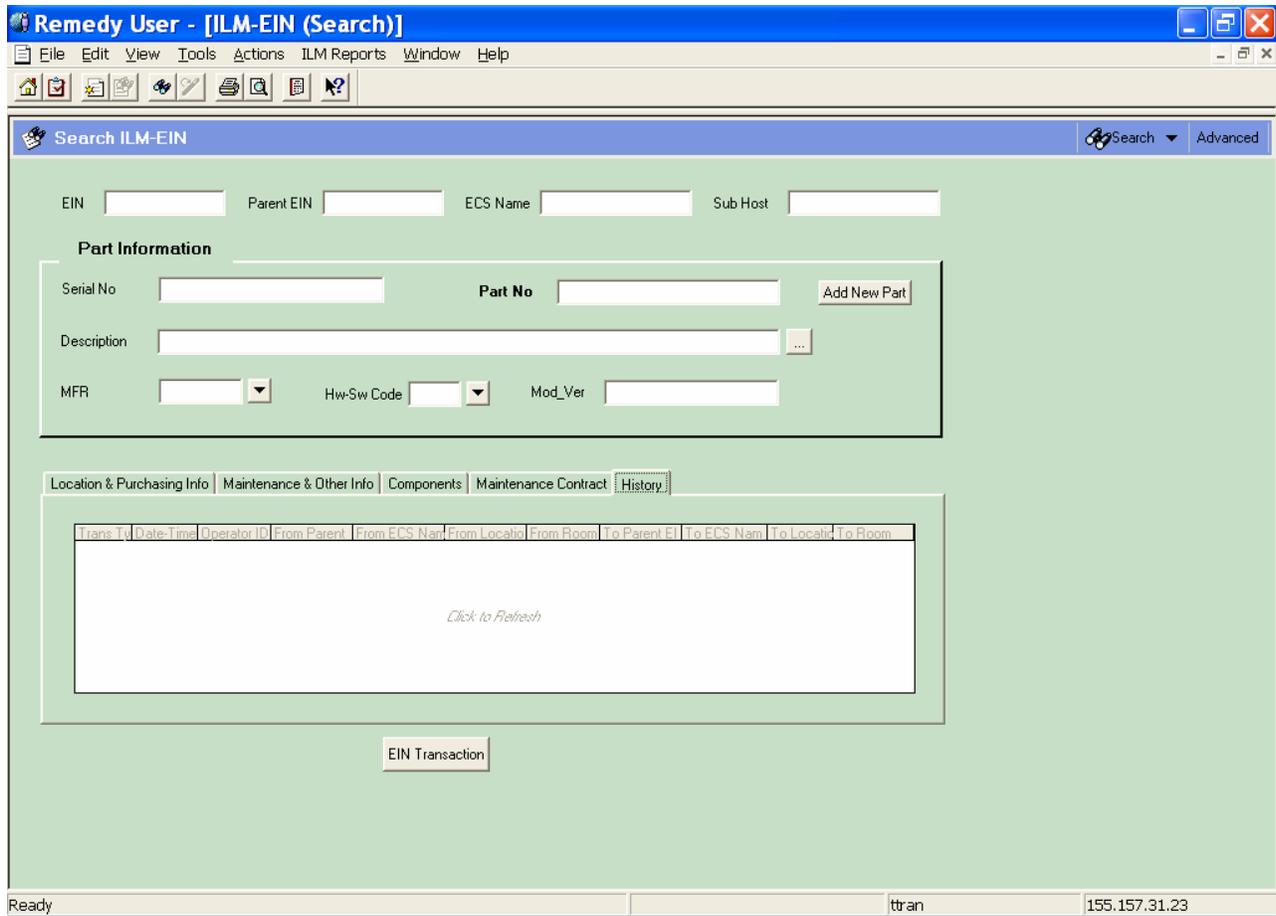


Figure 27.3.1-5. ILM-EIN (History) GUI

Table 27.3.1-1 describes the fields on the ILM- EIN form.

Table 27.3.1-1. ILM-EIN Form Field Description (1 of 2)

Field Name	Data Type	Size	Entry	Description
EIN	Char	20	Optional	Identifier for an inventory item.
Parent EIN	Char	20	Optional	EIN of the host of which this item is a component.
ECS Name	Char	30	Optional	Name of the machine with which the item is associated.
Sub Host	Char	30	Optional	Sub host is use to identify individual hosts within a main host. For example: Communication Rack, Rack will have 1 name installed. Items in the rack can each have a different name, this name is put into the sub host field.
Serial No	Char	30	Optional	Manufacturer's serial number of the item.
Part No	Char	34	Optional	Manufacturer's or vendor's part number.
Description	Char	80	Optional	Manufacturer's or vendor's description for the item.
Hw-Sw Code	Char	2	Optional	Code for classifying inventory items by type.
MFR	Char	6	Optional	Code used for the manufacturer.
Mod-Ver	Char	24	Optional	Model or version of the item.
Location & Purchasing Info.			Page	Contains the following fields about the EIN item: Location, Building, Room, Item Status, Vendor ID, PO Number, Cost, Quantity, Receive Date, Installation date, and Audit Date.
Location	Char	6	Optional	Identifier that designates an inventory location.
Building	Char	6	Optional	Identifier for the building where the item can be found.
Room	Char	15	Optional	Identifier for the room where the item can be found.
Item Status	Char	2	Optional, default R.	Code that designates the status of the item. The following values are set when processing transactions: R = Received; SP = Spare Equipment; I = Installed; X = Returned to vendor; G = Transfer to Gov; TV = Trade in to Vendor; S = Excess sold to vendor; RG = Relieved from accountability
Vendor ID	Char	6	Required	Code for the Vendor from whom the item was purchased.
PO Number	Char	10	Required	Identifier of the purchase order against which the item was received.
Cost	Decimal	10.2	Optional	Purchase cost of the item.
Quantity	Integer	4	Optional	Number of items purchased on a particular purchase order
Receive Date	Char		Optional	Date item was received from vendor.
Task Name	Char	10	Optional	Name of the task order under the EMD contract that the item was originally purchased for.

Table 27.3.1-1. ILM-EIN Form Field Description (2 of 2)

Field Name	Data Type	Size	Entry	Description
Audit Date	Date		Optional	Date the item was physically inventoried last
CCR	Char	10	Optional	Approved CCR number that requested the purchasing of the item.
Installation Date	Date		Optional	Date the item was installed. The system sets the value during EIN Installation processing.
Comment	Char	120	Optional	Miscellaneous information specific to the item.
Maint Contract ID	Char	10	Optional	Identifier for the Maintenance Contract under which the item is covered.
Maint Exp Date	Date		Optional	Date the maintenance contract will expire. This field reflects the Expiration Date from the Maint Contract ID entered above.
GFE NUM	Char	8	Optional	Identifier assigned by the Government to an item of government furnished equipment.
NASA Contract	Char	11	Optional, default NAS5-03098	Identifier designating the government contract used for this item.
Submitter	Char	30	System-supplied	The user whom created the record.
Create Date	Date		System-supplied	Date the record was created.
Last Modified By	Char	30	System-supplied	The user last modified the record.
Modify Date	Date		System-supplied	The last date the system was modified.
Request ID	Char	15	System-supplied	Provides record identifier.
Components			Page	Page for displaying the components of a parent EIN. It displays the Component EIN, ECS Name, Sub Host, description, Serial No, Active Date, Inactive Date, and Room.
Maintenance Contract			Page	Page displays attributes of the maintenance contract, such as Contract ID, Start Date, Expiration Date, Type of support, PO number, maintenance vendor, and vendor ID.
History			Page	Contains a listing of EIN transaction history for the EIN. This table displays the following fields describing the transactions: Trans Type, Date-Time, Operator ID, From Parent EIN, From ECS Name, From Location, From Room, To Parent EIN, To ECS Name, To Location, and To Room.

The following buttons are unique to this form:

- Add New Part – Activates the ILM-OEM Part form. This allows the operator to add new parts or to search for existing parts.
- EIN Transaction – brings up the ILM-EIN Transaction form. See section 27.3.3 for detail information about this form.

Table 27.3.1-2. Add New Inventory Item

Perform	Action	Expected Result
Navigate to the ILM-EIN Form	At the Remedy-ILM PC, ♦ Start- > Programs -> Action Request System -> Remedy User ♦ File -> Open -> ILM-EIN -> New	ILM-EIN form is displayed and ready for the user to add a new EIN record.
Defining new inventory item.	Fill in the necessary information: ♦ EIN: Enter the EIN number. If the item is an external hardware and has a silver sticker number, enter this number. If not, leave this field blank. ♦ Parent EIN: enter Parent EIN. Leave this field blank if the item is not a component to an EIN Structure. NOTE: Only structure hardware. ♦ Complete the Part information section. Note. The Part No field's label is Bolded . Therefore, you must enter a value into the Part No field. The Part No must exist in the ILM-OEM Part form. If not, the system will display an error message and will not except the value. If Part No does not exist, click on the Add New Part button and add the part information. ♦ Complete the Location & Purchasing Info section. NOTE: The following fields are bolded: Location, Item Status, Vendor ID, and PO Number . Therefore, you must enter values in all of these fields in order to save the record. If not, the system will display an error message stating that all required fields must be completed and will not save the record. ♦ Complete the Maintenance & Other Info section. ♦ Click on the Save icon on the tool bar to save the record.	♦ When the Parent EIN is entered, the system will populate the following fields using the data derived from the Parent EIN record: ECS Name, Location, Building, Room, Vendor ID, PO Number, Item Status, Receive Date. ♦ If there is a value in the Parent EIN field, the system adds the EIN as a component to the Parent EIN Structure in the ILM-EIN Structure form using the current date as the active date. ♦ When the Part No is entered and the Part No exists in the ILM-OEM Part form, the system will populate the following fields: Description, MFR, Hw-Sw Code and Mod_Ver. ♦ If the EIN field is blank, the system will generate the next prefixed C number after the record is saved. The newly created EIN number is displayed in the Status bar on the bottom left of the form.

NOTE: To move to the next field, use either the TAB key or the Mouse. The Enter key will not move the cursor to the next field.

Table 27.3.1-3. Modifying EIN Record

Perform	Action	Expected Result
Navigate to the ILM-EIN Form	At the Remedy-ILM PC, ♦ File -> Open -> ILM-EIN -> Search ♦ Perform a Search for the records to be modified.	♦ ILM-EIN form is displayed and ready for the user to add a new EIN record.
Modify ECS Name	♦ Find the EIN of interest. ♦ Enter the ECS Name. Warning: To maintain data consistency in the database, the system will not allow users to update the ECS Name of components. ♦ Click on the Save icon on the tool bar.	♦ The system updates the ECS Name for the EIN and all of its active components.
Modify the Audit Date	♦ Find the EIN of interest. ♦ Enter the new Audit Date. ♦ Click on the Save icon on the tool bar.	♦ The system updates the EIN's audit date as well as all the active C Number components audit date.

NOTE: To move to the next field use either the TAB key or the Mouse. The Enter key will not move the cursor to the next field.

27.3.1.1 ILM-EIN Predefined Reports

Table 27.3.1.1-1 lists a set of special report designed specifically for the ILM-EIN form. These reports are built in Crystal Report Writer. Table 27.3.1.1-1 describes the purpose each of the reports serves. Table 27.3.1.1-2 provides instruction on how to run these reports. The sections that follow present the report layouts.

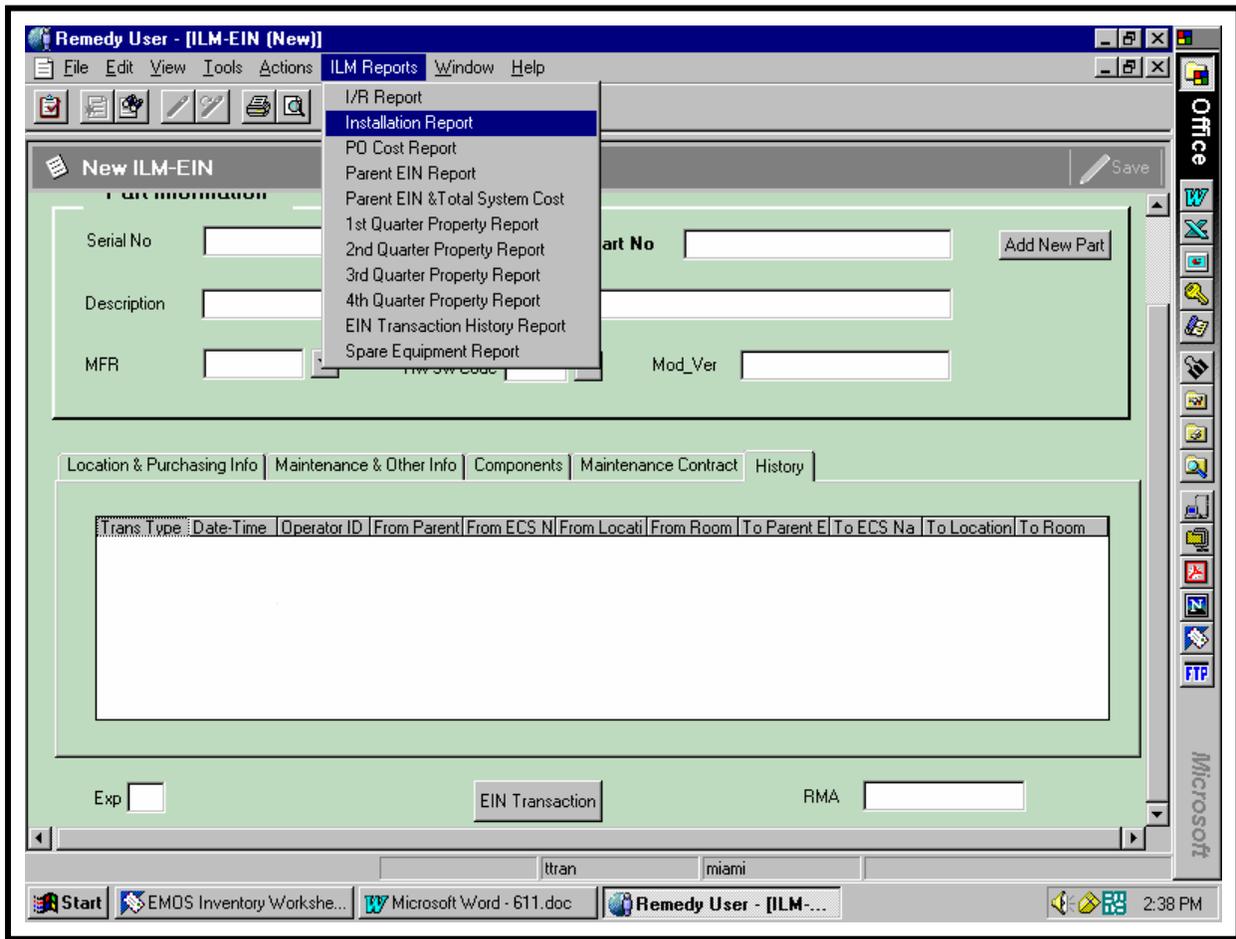


Figure 27.3.1.1-1. ILM-EIN Reports GUI

Table 27.3.1.1-1. ILM-EIN Pre-Defined Reports

Report Type	Report Description	Figure
Install/Receipt Report	A report describing an operator-specified EIN item together with all of its associated components order by EIN number.	27.3.1.1-6
Installation Report	A report describing an operator-specified EIN item together with its components having status "I" (for installed).	27.3.1.1-7
Purchase Order Cost Report	Provides a list of EINs and their cost associated with an operator-specified purchase order.	27.3.1.1-8
Parent EIN Report	Provides a listing of only Parent items.	27.3.1.1-9
Parent EIN and total System Cost Report	Provides a listing of only Parent items and the total system cost for each Parent.	27.3.1.1-10
Inventory Report	Provides an ASCII formatted report identifying the inventory items by Parent EIN according to the operator-specified criteria.	27.3.1.1-11
Quarterly Property Management Report	Provides a list of contractor-acquired equipment items by quarter, sorted by Mfr and product description.	27.3.1.1-12
Cost – Selected ECS Managed Property	Provides the quantity and total cost of operator-selected EINs, grouped by type of inventory (Hardware, Software, Consumable, i.e.).	27.3.1.1-13
EIN Transaction History	A list of the transactions processed for operator-specified items during an operator-specified timeframe, sorted by EIN number and "from" location	27.3.1.1-14
Spare Equipment Report	Provides a list of spare equipment for a selected site or system-wide.	27.3.1.1-15

Table 27.3.1.1-2. Procedures to Generate ILM-EIN Predefined Reports (1 of 4)

Perform	Action	Expected Result
Navigate to the ILM-EIN Form	At the Remedy-ILM PC, ♦ File -> Open -> ILM-EIN -> Search	♦ ILM-EIN form is displayed.
Run Install/Receipt Report	♦ Find the Parent EIN of Interest by doing a search in the Parent EIN field. ♦ When the records are displayed, ILM Reports -> I/R Report ♦ When the report is displayed, user has the option to either print the report by pressing the print icon or export the report into a file by pressing the Export Icon next to the print icon. ♦ Close the report preview.	♦ The Install/Receipt Report is displayed. Refer to Figure 27.3.1.1-6 for the report layout.
Run Installation Report	♦ Find the Parent EIN of Interest by doing a search in the Parent EIN field. ♦ When the records are displayed, ILM Reports -> Installation Report ♦ When the report is displayed, user has the option to either print the report by pressing the print icon or export the report into a file by pressing the Export Icon next to the print icon. ♦ Close the report preview.	♦ The Installation Report is displayed. Refer to Figure 27.3.1.1-7 for the report layout.
Run Purchase Order Cost Report	♦ Find the Purchase Order of Interest by doing a search in the PO Number field. ♦ When the records are displayed, ILM Reports -> PO Cost Report ♦ When the report is displayed, user has the option to either print the report by pressing the print icon or export the report into a file by pressing the Export Icon next to the print icon. ♦ Close the report preview.	♦ The Purchase Order Cost Report is displayed. Refer to Figure 27.3.1.1-8 for the report layout.

NOTE: To move to the next field, use either the TAB key or the Mouse. The Enter key will not move the cursor to the next field.

Table 27.3.1.1-2. Procedures to Generate ILM-EIN Predefined Reports (2 of 4)

Perform	Action	Expected Result
Run Parent EIN Report	<ul style="list-style-type: none"> ◆ ILM Reports -> Parent EIN Report ◆ When the ILM-DIA Reports form is displayed (see Figure 27.3.1.1-2), select or enter a site name to run the report. Leaving the Site value blank will select all Parent EINs. ◆ When the report is displayed, user has the option to either print the report by pressing the print icon or export the report into a file by pressing the Export Icon next to the print icon. ◆ Close the report preview. 	<ul style="list-style-type: none"> ◆ The Parent EIN report is displayed. Refer to Figure 27.3.1.1-9 for the report layout.
Run Parent EIN & Total System Cost Report	<ul style="list-style-type: none"> ◆ ILM Reports -> Parent EIN & Total System Cost Report ◆ When the ILM-DIA Reports form is displayed (see Figure 27.3.1.1-2), select or enter a site name to run the report. Leaving the Site value blank will select all Parent EINs. ◆ When the report is displayed, user has the option to either print the report by pressing the print icon or export the report into a file by pressing the Export Icon next to the print icon. ◆ Close the report preview. 	<ul style="list-style-type: none"> ◆ The Parent EIN & Total System Cost report is displayed. Refer to Figure 27.3.1.1-10 for the report layout.

NOTE: To move to the next field, use either the TAB key or the Mouse. The Enter key will not move the cursor to the next field.

Table 27.3.1.1-2. Procedures to Generate ILM-EIN Predefined Reports (3 of 4)

Perform	Action	Expected Result
<p>Run Inventory Report</p> <p>NOTE: This report is not listed under ILM Report. It's located in the Remedy's Report Style listing.</p>	<ul style="list-style-type: none"> ◆ Search for the records of interest to perform the report on. ◆ When the records are displayed, make sure to un-select the highlighted record by pressing the Ctrl and single-click the highlighted item simultaneously. ◆ Tools -> Reporting -> Inventory Rpt -> Report -> Export To -> File ◆ When the Report to File GUI (see Figure 27.3.1.1-3) is displayed. <ul style="list-style-type: none"> Select the appropriate directory to save the report in Enter a report file name Save as Type = All File (*.*) <p>Warning: The report will not work if the Save as Type is anything else other than All File.</p> <p>Press the Save button</p> <ul style="list-style-type: none"> ◆ Bring up Excel ◆ File -> Open -> <Report Name> ◆ When the Text Import Wizard GUI (Figure 27.3.1.1-4) is displayed: <ul style="list-style-type: none"> Delimiters -> Next Select Tab -> Next Change the EIN, Parent EIN, Part No, and Serial No fields to Text. This will keep all the leading zeros. Click on the Finish button 	<ul style="list-style-type: none"> ◆ The inventory report is displayed in Excel. User may make any necessary adjustment to this report. Please refer to MS Excel help for any question on how to use MS Excel. Refer to Figure 27.3.1.1-11 for the report layout.
<p>Run (1st, 2nd, 3rd, or 4th) Quarterly Property Management Report</p>	<ul style="list-style-type: none"> ◆ ILM Reports -> (1st, 2nd, 3rd, or 4th) Quarterly Property Report ◆ When the report is displayed, user has the option to either print the report by pressing the print icon or export the report into a file by pressing the Export Icon next to the print icon. ◆ Close the report preview. 	<ul style="list-style-type: none"> ◆ The Quarterly Property Management report is displayed. Refer to Figure 27.3.1.1-12 for the report layout.

NOTE: To move to the next field, use either the TAB key or the Mouse. The Enter key will not move the cursor to the next field.

Table 27.3.1.1-2. Procedures to Generate ILM-EIN Predefined Reports (4 of 4)

Perform	Action	Expected Result
<p>Run Cost-Selected ECS Managed Report</p> <p>NOTE: This report is not listed in the ILM Reports listing. It's located in the Remedy's Report Style.</p>	<ul style="list-style-type: none"> ◆ Search for the records of interest to perform the report. ◆ When the records are displayed, make sure to un-select the highlighted record by pressing the Ctrl and single-click the highlighted item simultaneously. ◆ Tools -> Reporting -> Cost – ECS Managed Property -> Report -> Preview ◆ When the report is displayed, user has the option to either print the report by pressing the print icon or export the report into a file by pressing the Export Icon next to the print icon. ◆ Close the report preview. 	<ul style="list-style-type: none"> ◆ The Cost-Selected ECS Managed Report is displayed. See Figure 27.3.1.1-13 for report layout.
<p>Run EIN Transaction History Report</p>	<ul style="list-style-type: none"> ◆ Find the EIN of Interest by entering the EIN in the EIN field and performing a search. ◆ When the records are displayed, <ul style="list-style-type: none"> ILM Reports -> EIN Transaction History Report ◆ When the report is displayed, user has the option to either print the report by pressing the print icon or export the report into a file by pressing the Export Icon next to the print icon. ◆ Close the report preview. 	<ul style="list-style-type: none"> ◆ The EIN Transaction History report is displayed. See Figure 27.3.1.1-14 for report layout.
<p>Run Spare Equipment Report</p>	<ul style="list-style-type: none"> ◆ ILM Reports -> Spare Equipment Report ◆ When the ILM-DIA Reports form is displayed (see Figure 27.3.1.1-2), select or enter a site name to run the report. Leaving the Site value blank will select all the spare equipment in the database. ◆ When the report is displayed, user has the option to either print the report by pressing the print icon or export the report into a file by pressing the Export Icon next to the print icon. ◆ Close the report preview. 	<ul style="list-style-type: none"> ◆ The Spare Equipment report is displayed. See Figure 27.3.1.1-15 for report layout.

NOTE: To move to the next field, use either the TAB key or the Mouse. The Enter key will not move the cursor to the next field.

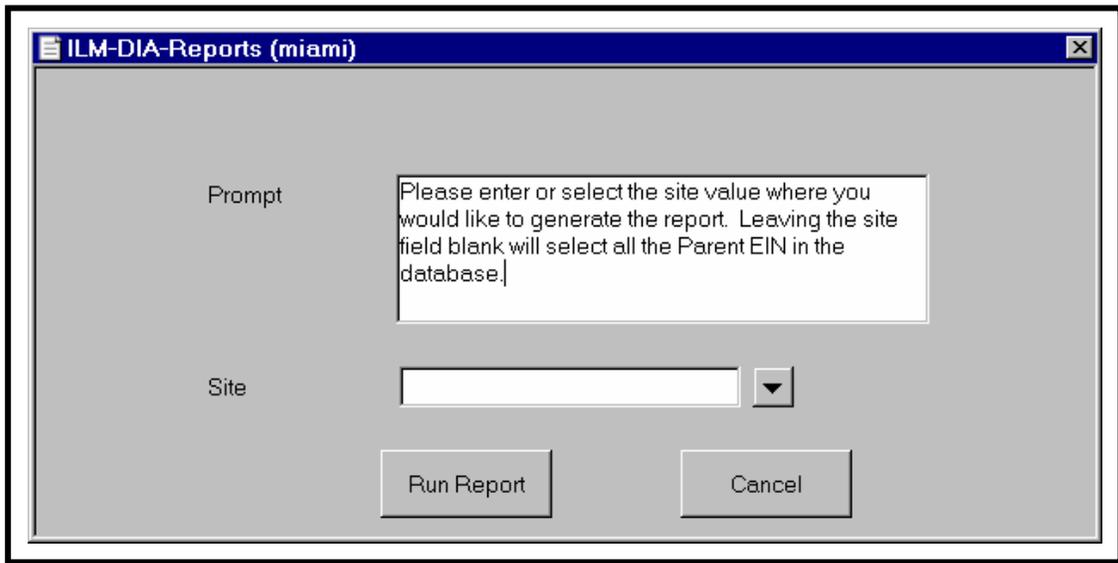


Figure 27.3.1.1-2. ILM-DIA Reports GUI

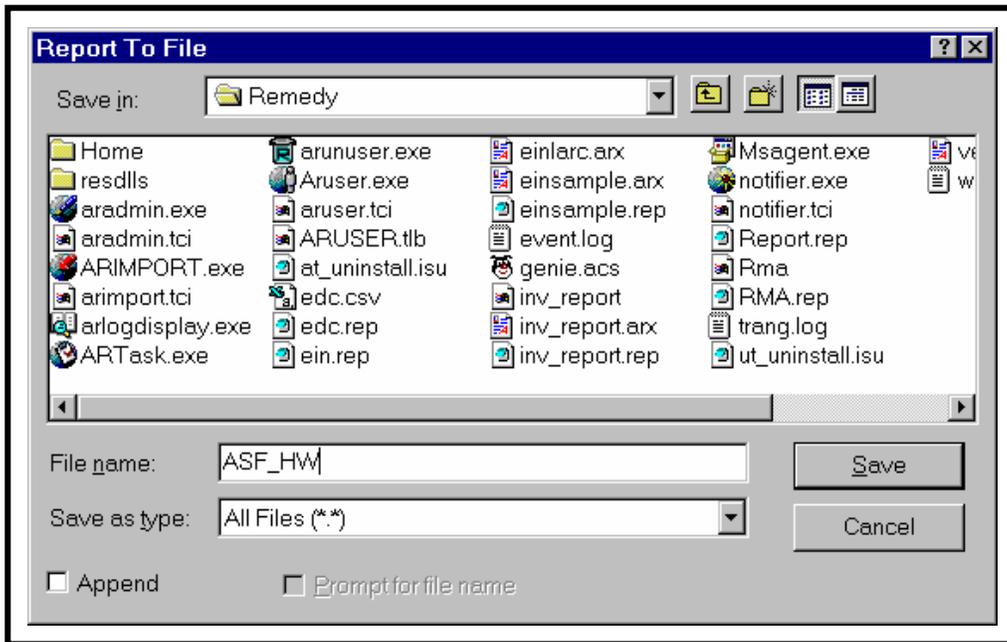


Figure 27.3.1.1-3. Report To File GUI

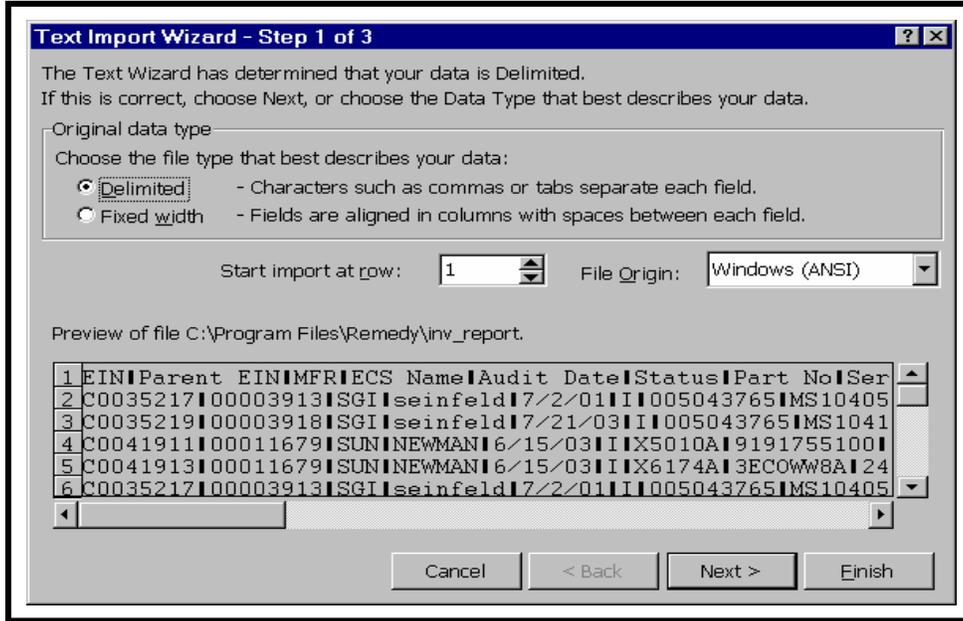


Figure 27.3.1.1-4. Text Import Wizard GUI

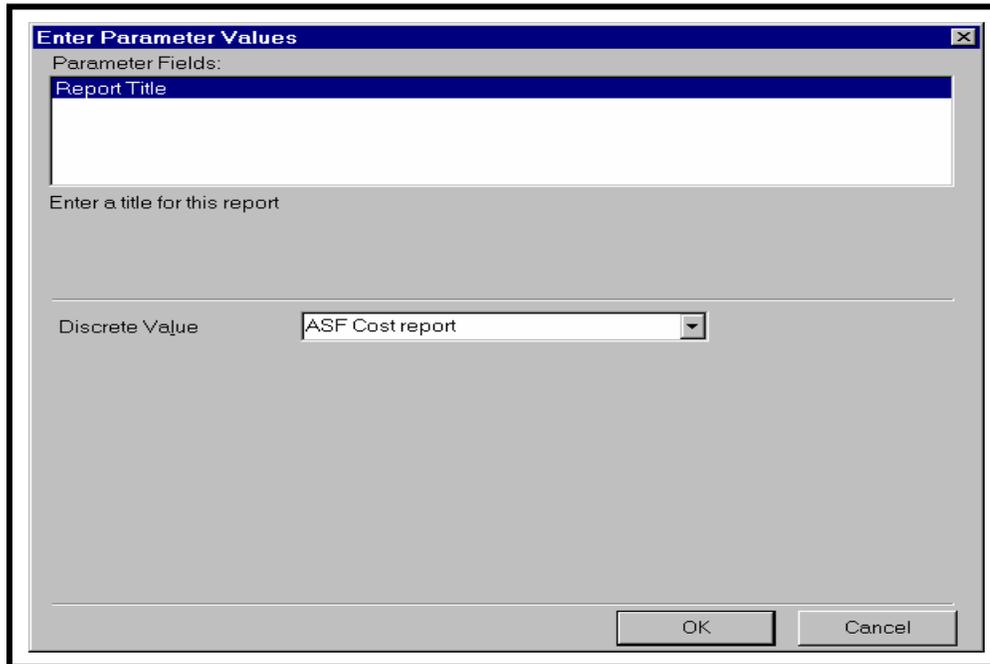


Figure 27.3.1.1-5. Enter Parameter Values GUI

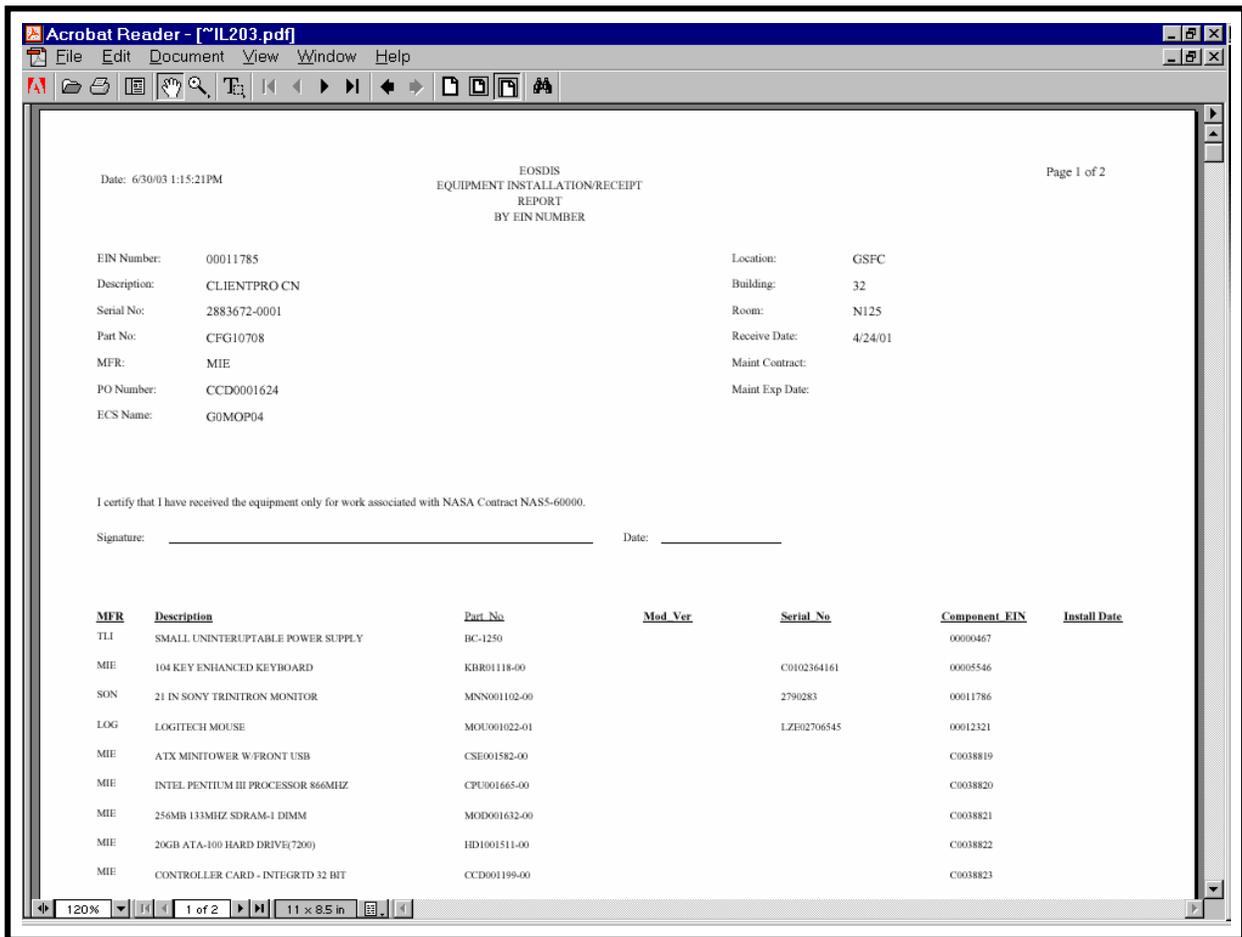


Figure 27.3.1.1-6. Install/Receipt Report GUI

Acrobat Reader - [~\IL263.pdf]

File Edit Document View Window Help

DATE:6/30/03 1:28:53PM PURCHASE ORDER COST REPORT Page 1 of 1
 VENDOR- SGI
 PO Number - CCL0014185

<u>EIN</u>	<u>PART NUM</u>	<u>DESCRIPTION</u>	<u>SERIAL NO</u>	<u>COST</u>
00020620	WF-600V10-2073	FUEL V10 GRAPHINS 600MHZ	0800691051C4	\$14,054.00
00020621	M-543	MOUSE		\$0.00
00020622	KBB-US	KEYBOARD		\$0.00
C0050414	PCIX-GIGENET-C	1 PORT COPPER GB	HYUR126954	\$511.00
C0050415	PCIX-GIGENET-OR-SU	1 PORT OPT ETHERNET CARD	HYTR126839	\$1,056.00
C0050418	P10-CDR48INT	INTERNAL CD-ROM 40X		\$594.00
C0050419	P10-73G10K-INT	10000RPM INT 3.5 73GB		\$1,584.00
				<hr/> <hr/> \$17,799.00

120% 1 of 1 11 x 8.5 in

Figure 27.3.1.1-8. Purchase Order Cost Report GUI

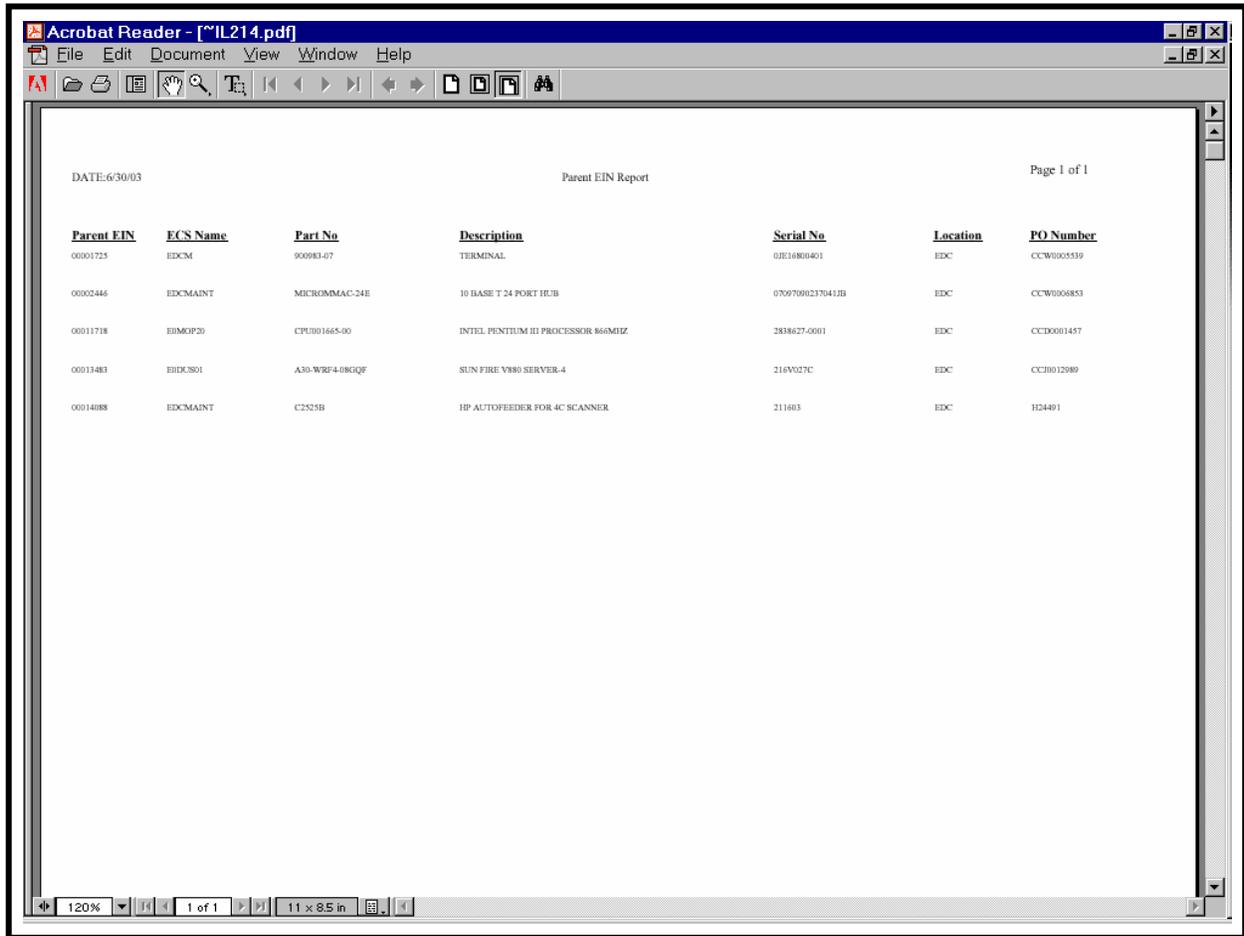


Figure 27.3.1.1-9. Parent EIN Report GUI

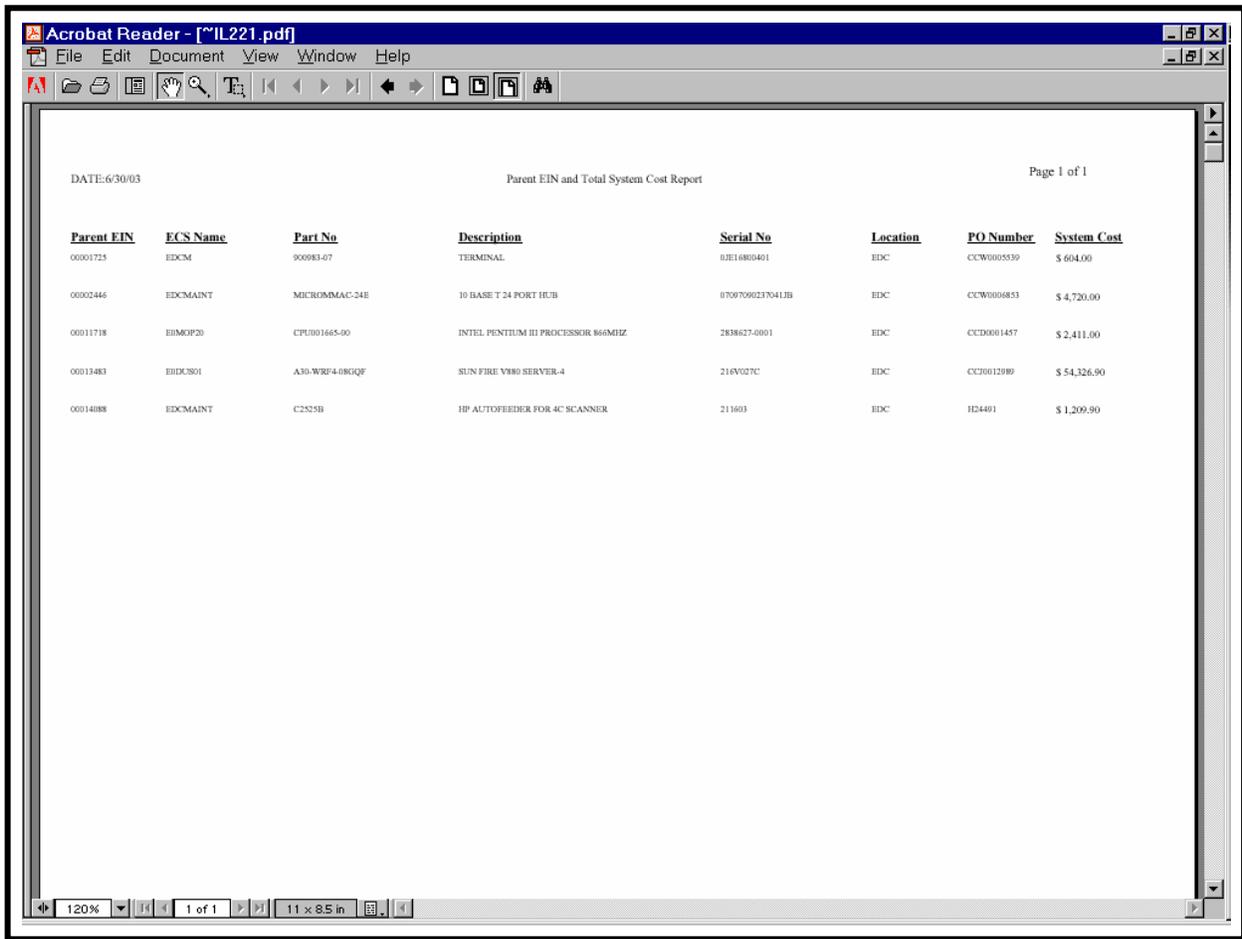


Figure 27.3.1.1-10. Parent EIN & Total System Cost Report GUI

Parent EIN	Part EIN	Mfr	ECS Name	Audit Date	Stat	Part Num	Serial Num	Unit Cost	Product Description	Location	Bldg	Room	Code	PO Num	Date Rec'd	Vendor
00001838	00001838	SUN	n0dms04	2/6/02	I	A12-UBA1-1E-064AB	645F0AAA	\$8,797.00	Ultra 1 System	NSIDC	NSIDC	209	H	CCW0005354	12/2/96	SUN
00001838	00001891	SUN	n0dms04	2/6/02	I	X5203A	645G0830	\$1,035.00	UniPak - 4.2 GB 5400 RPM FW SCSI-2	NSIDC	NSIDC	209	H	CCW0005354	12/18/96	SUN
00001838	00003491	SUN	n0dms04	2/6/02	I	X267A	9843KN4545	\$5,000.00	Color Monitor - 20 IN	NSIDC	NSIDC	209	H	CCW0005354	12/2/96	SUN
00001838	00006793	SUN	n0dms04	2/6/02	I	NE SUN1	LZB64001097	\$0.00	Mouse - 3 Button Track Ball	NSIDC	NSIDC	209	H	CCW0005354	12/2/96	SUN
00001838	00006794	SUN	n0dms04	2/6/02	I	320-1233-02	9626371319	\$0.00	Keyboard	NSIDC	NSIDC	209	H	CCW0005354	12/2/96	SUN
00001838	C0009132	SUN	n0dms04	2/6/02	I	X1025A	12603	\$1,500.00	FDDI SINGLE ATTACH SBUS CARD	NSIDC	NSIDC	209	H	CCW0005354	12/2/96	SUN
00001838	C0009133	SUN	n0dms04	2/6/02	I	X132P	501282278476877	\$0.00	Memory - 32MB RAM Expansion (1x32)	NSIDC	NSIDC	209	H	CCW0005354	12/2/96	SUN
00001838	C0009134	SUN	n0dms04	2/6/02	I	X132P	501262278476942	\$0.00	Memory - 32MB RAM Expansion (1x32)	NSIDC	NSIDC	209	H	CCW0005354	12/2/96	SUN
00001838	C0009135	SUN	n0dms04	2/6/02	I	X3500A		\$0.00	Country Kit	NSIDC	NSIDC	209	H	CCW0005354	12/2/96	SUN
00001838	C0009136	SUN	n0dms04	2/6/02	I	X6001A	9625201083	\$90.00	Floppy Drive - 3.5 IN Disk Drive-1	NSIDC	NSIDC	209	H	CCW0005354	12/2/96	SUN
00001838	C0009137	SUN	n0dms04	2/6/02	I	X6153A	9647723061	\$240.00	CD ROM - Internal SUNCD 4	NSIDC	NSIDC	209	H	CCW0005354	12/2/96	SUN
00001838	C0009839	SUN	n0dms04	2/6/02	I	370-2286-01	9643604099	\$0.00	Hard Drive - Internal for X5204A	NSIDC	NSIDC	209	H	CCW0005354	12/18/96	SUN
00001838	C0045377	SUN	n0dms04	6/25/02	I	X5237A	0145KP6EMS	\$479.20	ULTRA SCSI DISK DRIVE, 18GB INTERN	NSIDC	NSIDC	209	H	CCD0002848	11/27/01	SUN
00001838	C0149507	SUN	n0dms04	1/27/99	I	SOLD-C		\$45.00	Solaris Media for Servers	NSIDC	NSIDC	209	S	CCW0005354	12/2/96	SUN
00001839	00001839	SUN	n0mos20	2/6/02	I	A12-UBA1-1E-064AB	645F0B2C	\$8,797.00	Ultra 1 System	NSIDC	NSIDC	252	H	CCW0005354	12/2/96	SUN
00001839	00001890	SUN	n0mos20	2/6/02	I	X5203A	645G0868	\$1,035.00	UniPak - 4.2 GB 5400 RPM FW SCSI-2	NSIDC	NSIDC	252	H	CCW0005354	12/18/96	SUN
00001839	00003494	SUN	n0mos20	2/6/02	I	X267A	9647GI3704	\$5,000.00	Color Monitor - 20 IN	NSIDC	NSIDC	252	H	CCW0005354	4/3/00	SUN
00001839	00006771	SUN	n0mos20	2/6/02	I	320-1233-02	9626371388	\$0.00	Keyboard	NSIDC	NSIDC	252	H	CCW0005354	12/2/96	SUN
00001839	00006772	SUN	n0mos20	2/6/02	I	NE SUN1	LZB64001084	\$0.00	Mouse - 3 Button Track Ball	NSIDC	NSIDC	252	H	CCW0005354	12/2/96	SUN
00001839	C0009138	SUN	n0mos20	2/6/02	I	370-2040-03	9643547711	\$0.00	Hard Drive - 2.1 GB Internal	NSIDC	NSIDC	252	H	CCW0005354	12/2/96	SUN
00001839	C0009139	SUN	n0mos20	2/6/02	I	X1025A	11748	\$1,500.00	FDDI SINGLE ATTACH SBUS CARD	NSIDC	NSIDC	252	H	CCW0005354	12/2/96	SUN
00001839	C0009140	SUN	n0mos20	2/6/02	I	X132P	501262279495644	\$0.00	Memory - 32MB RAM Expansion (1x32)	NSIDC	NSIDC	252	H	CCW0005354	12/2/96	SUN
00001839	C0009141	SUN	n0mos20	2/6/02	I	X132P	501262279495714	\$0.00	Memory - 32MB RAM Expansion (1x32)	NSIDC	NSIDC	252	H	CCW0005354	12/2/96	SUN
00001839	C0009142	SUN	n0mos20	2/6/02	I	X3500A		\$0.00	Country Kit	NSIDC	NSIDC	252	H	CCW0005354	12/2/96	SUN
00001839	C0009143	SUN	n0mos20	2/6/02	I	X6001A	9625201087	\$90.00	Floppy Drive - 3.5 IN Disk Drive-1	NSIDC	NSIDC	252	H	CCW0005354	12/2/96	SUN
00001839	C0009144	SUN	n0mos20	2/6/02	I	X6153A	6Y50C01029	\$240.00	CD ROM - Internal SUNCD 4	NSIDC	NSIDC	252	H	CCW0005354	12/2/96	SUN
00001839	C0009838	SUN	n0mos20	2/6/02	I	370-2286-01	9643604145	\$0.00	Hard Drive - Internal for X5204A	NSIDC	NSIDC	252	H	CCW0005354	12/18/96	SUN
00001839	C0038808	SUN	n0mos20	2/6/02	I	501-2961	017403	\$0.00	System Board	NSIDC	NSIDC	252	H	CCW0005354	4/16/01	SUN
00001839	C0149508	SUN	n0mos20	1/27/99	I	SOLD-C		\$45.00	Solaris Media for Servers	NSIDC	NSIDC	252	S	CCW0005354	12/2/96	SUN

Figure 27.3.1.1-11. Inventory Report GUI

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6/30/03 1:27:06PM ECS Quarterly Property Management Report Page 1 of 1
 Contractor Acquired Equipment
 Contract number NASS-60000
 Period: 4/1/03 to 6/30/03

<u>EIN</u>	<u>MFR</u>	<u>DESCRIPTION</u>	<u>SERIAL NO</u>	<u>LOCATION</u>	<u>COST</u>
C0001851	ATI	10 BASE T TRANSCEIVER		EDFARC	\$39.00
00000999	ATI	10 BASE T TRANSCEIVER		EDF	\$0.00
00000998	ATI	10 BASE T TRANSCEIVER		EDF	\$0.00
C0051060	STK	LC/SC 50M/120U FIBER CABLE		EDF	\$126.00
C0051061	STK	FC 50/ 125 SC-SC DUP 50 MTR		EDF	\$206.00
C0051094	SGI	25M OPT CABLE W/LC/LC CONNETORS		EDF	\$340.56
C0051128	SUN	CABLE ULTRA SCSI-3		EDF	\$152.00
C0051136	MIT	MITSUI DVD-R		EDF	\$3,175.00
C0051137	MIT	JEWEL CASE ON SIDE		EDF	\$100.00
C0051154	MBS	J-CARD FRONT INSERT 80#		EDF	\$35.00
00030000	SUN	SPARCSTATION 20-71 SX	LKJSDFLJ	EDF	\$4,522.00
CS000046	SUN	CD ROM - INTERNAL SUNCDD 2 PLUS	LKEIOLKJASD	EDF	\$555.00
CS000047	SUN	HARD DRIVE - 8.4GB F/W SCSI-2 DESKTOP	ILEJW90ELKJDA	EDF	\$555.00
CS000052	SGI	18GB 10K EXTERNAL HD	1234567890123456789	EDF	\$0.00
CS000053	SGI	18GB 10K EXTERNAL HD	1234567890123456789	EDF	\$0.00
CS000054	SUN	INTERNAL 18.2GB ULTRA SCSI DRIVE	KLJASDJFKLSD56432132	EDF	\$0.00
CS000058	SUN	INTERNAL 18.2GB ULTRA SCSI DRIVE	6523ASD56FDS321SD	EDF	\$0.00
CS000068	IBM	TESTING MWO LI ADD NEW PART	KLJKJDAIODKL	EDF	\$0.00

The cost of these contractor-acquired equipment for the quarter ending 6/30/03 is: **\$9,805.56**

120% 1 of 1 11 x 8.5 in

Figure 27.3.1.1-12. Quarterly Property Management Report GUI

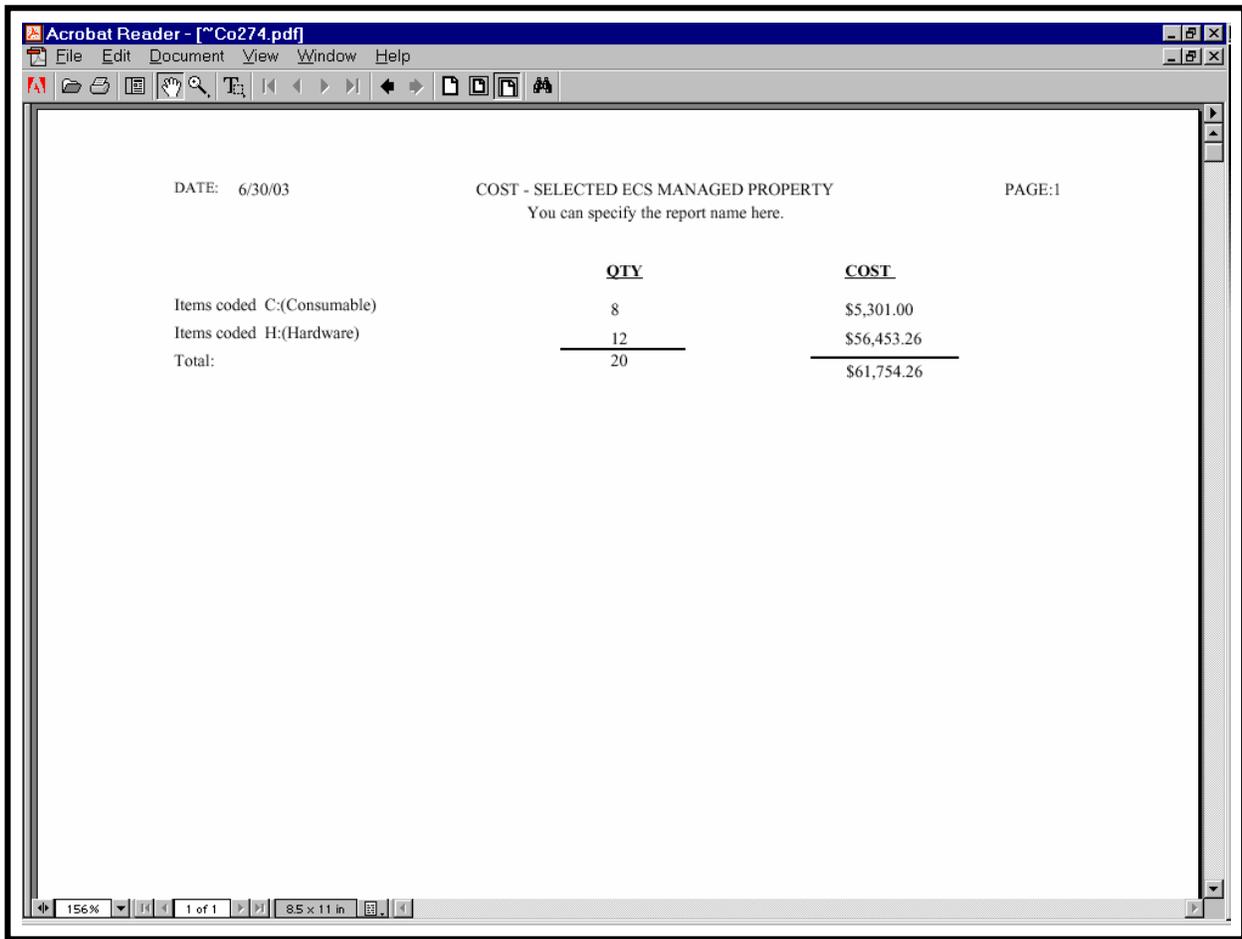


Figure 27.3.1.1-13. Cost – Selected ECS Managed Report GUI

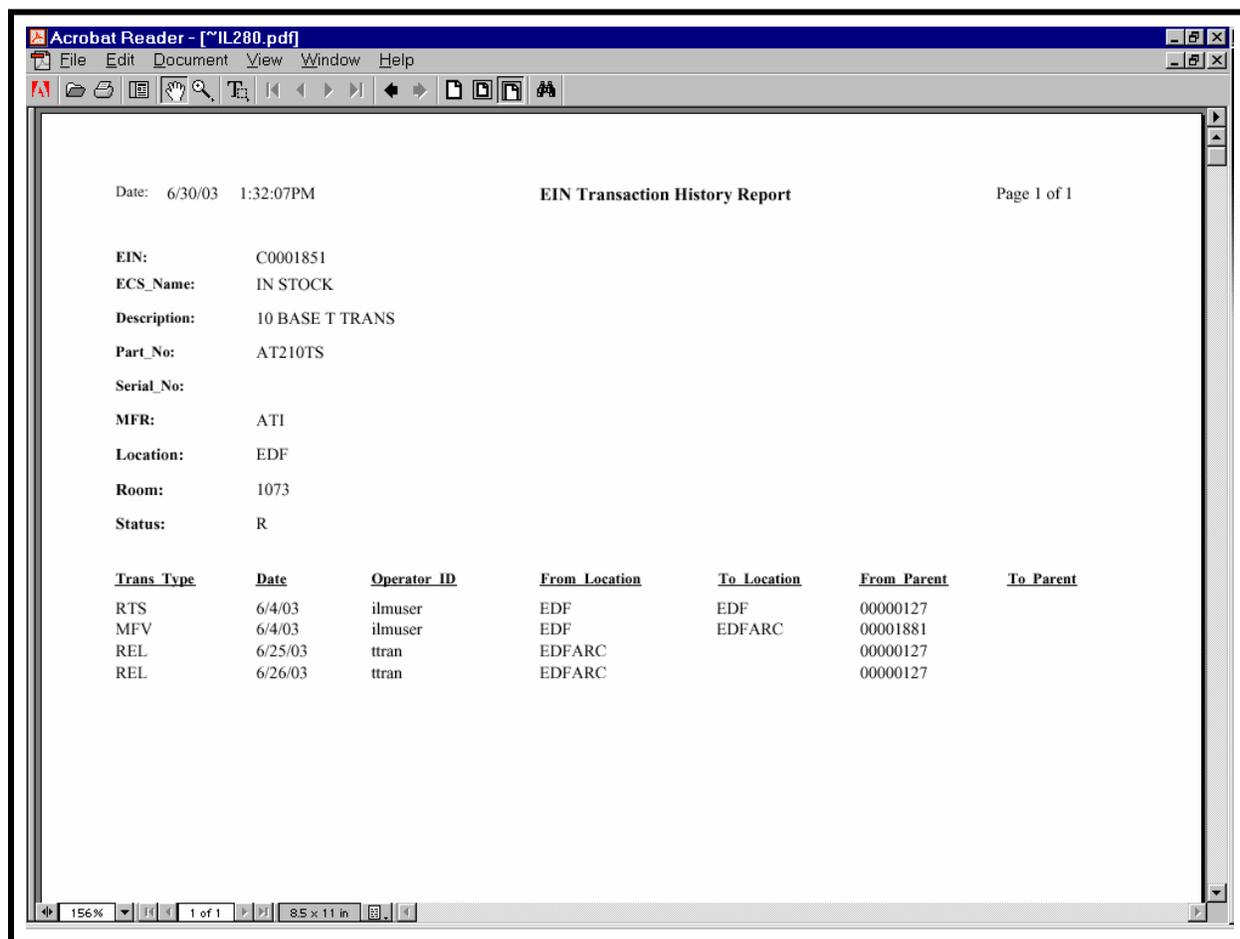


Figure 27.3.1.1-14. EIN Transaction History Report

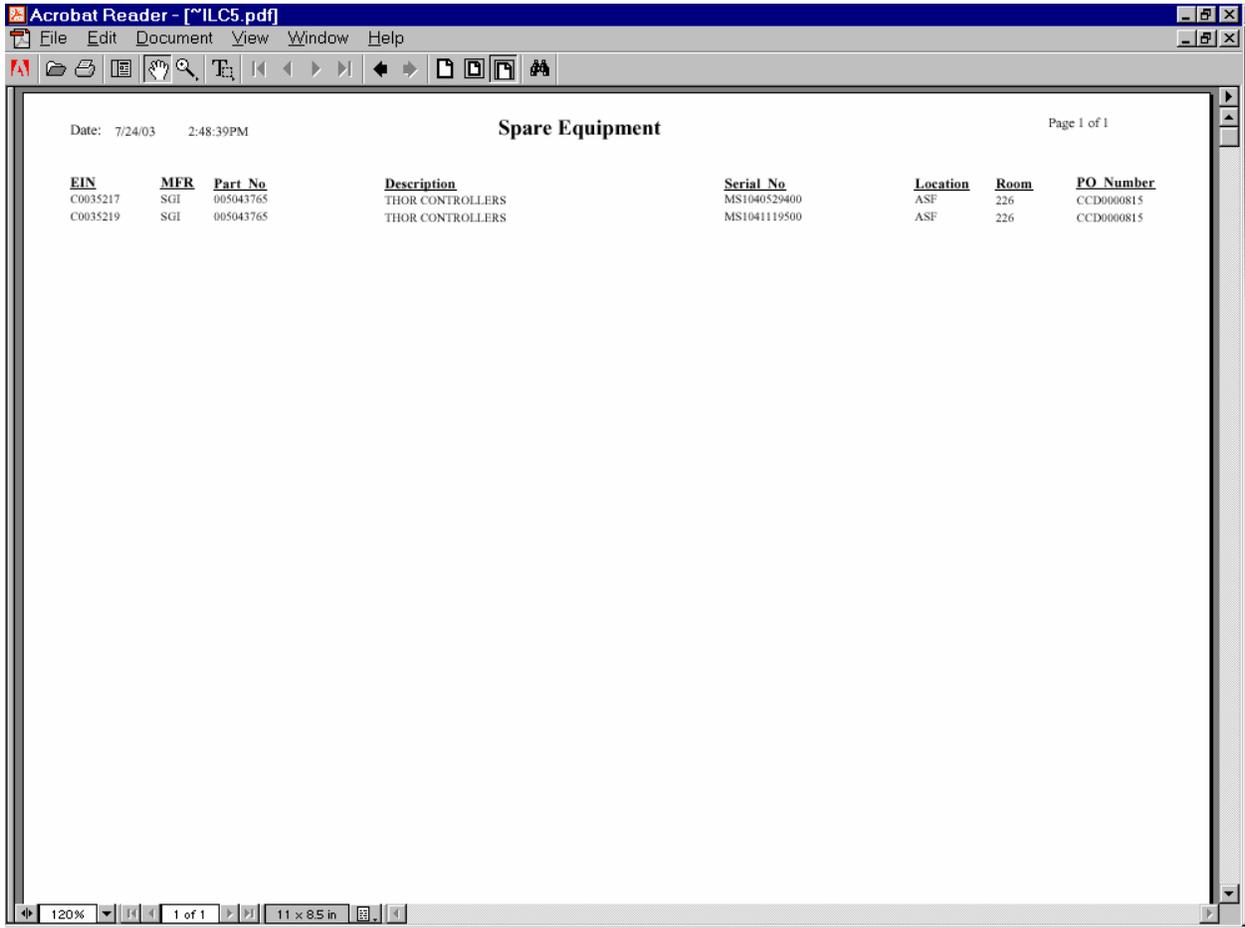


Figure 27.3.1.1-15. Spare Equipment Report GUI

27.3.2 ILM-EIN Structure GUI

The ILM-EIN Structure form (Figures 27.3.2-1) is designed to allow an Administrator to repair EIN structure records. Other ILM groups may view EIN Structure via the ILM-EIN form discussed in the previous section. To make changes to EIN Structures use the ILM-EIN Transaction form discussed in the next section.

The screenshot shows a web browser window titled "Remedy User - [ILM-EIN Structure (New)]". The browser's address bar and menu bar are visible. The main content area is titled "New ILM-EIN Structure" and contains the following form elements:

- Parent EIN** and **Component EIN** text input fields.
- Active Date** and **Inactive Date** dropdown menus.
- Process** dropdown menu.
- Submitter** text input field (value: ttran), **Create Date** button, and **Last Modified By** text input field.
- Parent Information** section with fields for:
 - ECS Name** and **System Serial No** text input fields.
 - Part No** and **MFR** dropdown menus.
 - Description** text input field.
 - Location** dropdown menu, **Building** text input field, and **Room** text input field.
- Components** section containing a table with the following headers: Component EIN, ECS Name, Description, Serial No, Act Date, Inact Date, Location, Room. The table body is empty and contains the text "Click to Refresh".

The status bar at the bottom of the browser window shows "Ready", the user "ttran", and the IP address "155.157.31.23".

Figure 27.3.2-1. ILM-EIN Structure GUI

Table 27.3.2-1 contains description of the ILM-EIN Structure form fields.

Table 27.3.2-1. ILM-EIN Structure Field Descriptions

Field Name	Data Type	Size	Entry	Description
Parent EIN	Char	20	Required	EIN for the parent item in an EIN structure.
ECS Name	Char	30	System-supplied	Name of the machine with which the item is associated.
System Serial No	Char	30	System-supplied	Serial number of the item.
Part No	Char	34	System-supplied	Manufacturer's part number.
Description	Char	60	System-supplied	Manufacturer's or vendor's description for the item.
MFR	Char	6	System-supplied	Code for the manufacturer of the item.
Location	Char	6	System-supplied	Identifier that designates an inventory location.
Building	Char	6	System-supplied	The building where the item can be found.
Room	Char	15	System-supplied	The room where the item can be found.
Component EIN	Char	20	Required	Identifier for an EIN controlled inventory item.
Active Date	Date		Required	Date the item was added to the parent structure.
Inactive Date	Date		Optional	Date the component is no longer assigned to the Parent EIN.
Process	Char	1	Optional	Identifier for Component EIN to be processed by EIN transactions.
Components	Table field		System-supplied	Field for displaying the components of a parent EIN. This table contains the following fields describing the Component EIN: Component EIN, ECS Name, Description, Serial No, Active Date, Inactive Date, Location, and Room.

27.3.3 ILM-EIN Transaction GUI

The ILM-EIN Transaction form (Figures 27.3.3-1 through 27.3.3-3) lets the operator perform the following EIN transactions for inventory items: Installation, Relocation, Return to Stock, Movement, Shipment, and Archive. The operator may select the type of transaction from the drop down list on the Transaction Type field as displayed below. Depending on the type of transaction the operator selects, Remedy will perform inventory updates accordingly. The Operator can specify components to be processed by pressing the “Select Components to Process” button. Remedy then transfer the operator to the ILM-Process Component form to complete the transaction. Table 27.3.3-1 describes the field definitions for this form. Table 27.3.3-2 presents detail instructions on how to perform these transactions and how each of them affects the property records and their EIN structures.

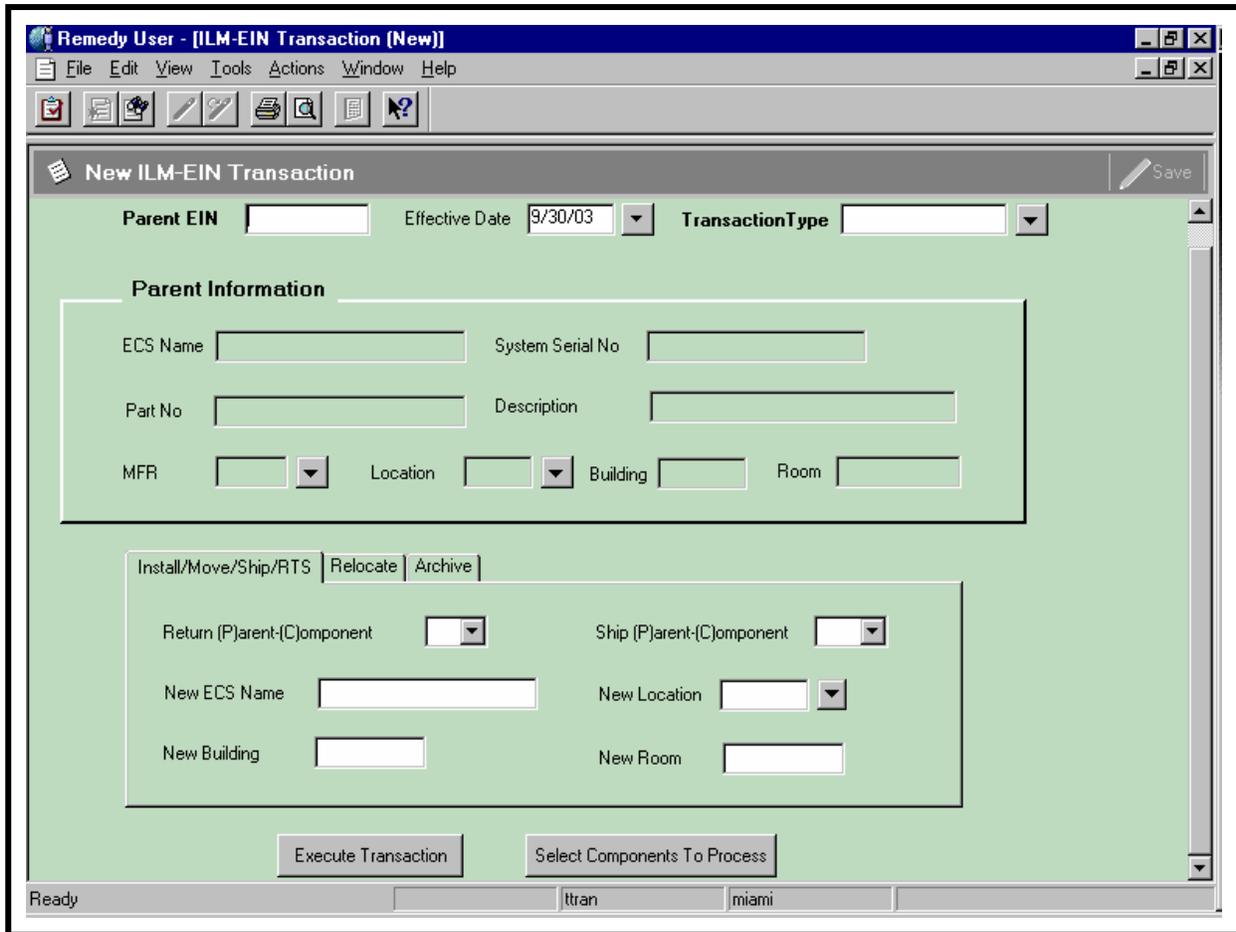


Figure 27.3.3-1. ILM-EIN Transaction GUI (Install/Move/Ship/RTS)

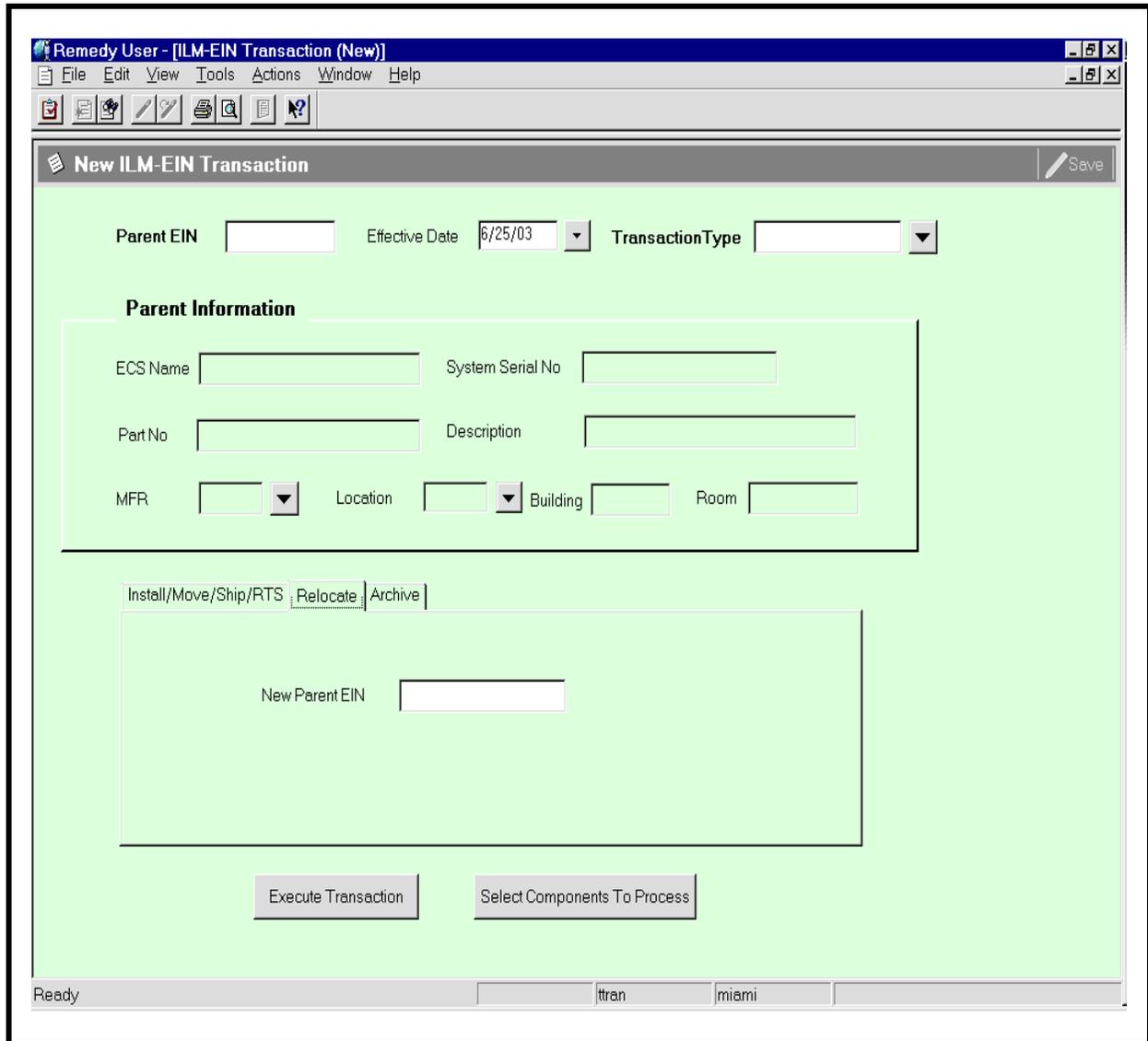


Figure 27.3.3-2. ILM-EIN Transaction GUI (Relocation)

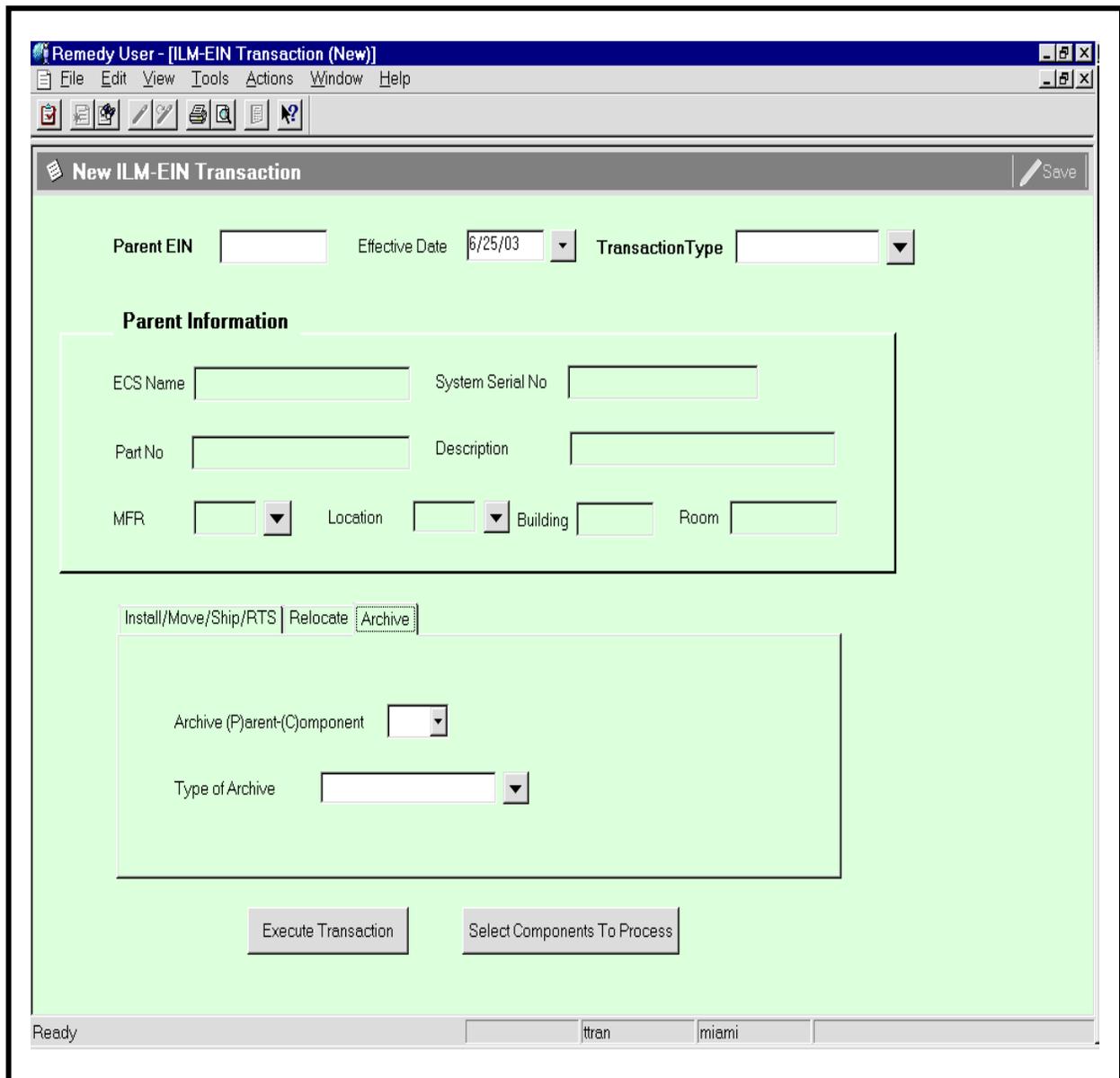


Figure 27.3.3-3. ILM-EIN Transaction GUI (Archive)

Table 27.3.3-1 describes the ILM-EIN transaction form field definitions.

Table 27.3.3-1. ILM-EIN Transaction Form Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
Parent EIN	Char	20	Required	EIN for the parent item in an EIN structure.
Transaction Type	Char	15	Required	Type of transaction performs on the Parent EIN such as Installation, relocation, movement, shipment, Return To Stock, and archive.
Effective Date	Date		Optional	The date the transaction is in effect.
ECS Name	Char	30	System-supplied	Name of the machine with which the item is associated.
System Serial No	Char	30	System-supplied	Serial number of the Parent EIN.
Part No	Char	34	System-supplied	Manufacturer's or vendor's part number.
MFR	Char	6	System-supplied	Code for the manufacturer of the item.
Description	Char	60	System-supplied	Manufacturer's or vendor's description for the item.
Location	Char	6	System-supplied	Identifier that designates an inventory location.
Room	Char	15	System-supplied	The room where the item can be found.
New ECS Name	Char	30	Optional	New ECS Name for the Parent EIN.
New Location	Char	6	Optional	New Location where the item will be.
New Building	Char	6	Optional	New Building where the item will be.
New Room	Char	15	Optional	New room where the item will be.
Return (P)arent-(C)omponent	Char	1	Optional, P or C	Identify whether the operator will return Parent and all of the components to stock or return some of the components to stock.
Ship (P)arent-(C)omponent	Char	1	Optional, P or C	Identify whether the operator will ship Parent and all of the components or ship some of the components to a new location.
New Parent EIN	Char	20	Optional	New Parent EIN to which the item(s) will be associated with.
Archive (P)arent-(C)omponent	Char	1	Optional, P or C	Identify whether the operator will archive the Parent as well as all the active components or archive a subset of components.
Type of Archive	Char	6	Optional, X, TV,G, RG	Define the type of archive, i.e.: Return to Vendor – X; Trade in to vendor – TV; Transferred to government – G; Government Relieved Accountability – RG; and Excess sold to vendor = S

Table 27.3.3-1. ILM-EIN Transaction Form Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
Install/Move/Ship/RTS	Page		N/A	This page contains the following fields to perform the EIN Installation, Movement, Shipment, and Return to Stock: Return (P)arent-(C)omponent, Ship (P)arent-(C)omponent, New ECS Name, New Location, New Building, and New Room.
Relocate	Page		N/A	This page contains the New Parent EIN field for user to perform EIN relocation.
Archive	Page		N/A	This page contains the following fields to perform EIN archive: Archive (P)arent-(C)omponent and Type of Archive.

- ◆ Pressing the Execute Transaction will process the transaction and updates inventory items according to the type of transaction the operator selected.
- ◆ Pressing the “Select Components to Process” button will bring up the ILM-Process Component form. This button will be visible only when the transaction is associated with components.

Table 27.3.3-2. Procedures to Perform EIN Transactions (1 of 8)

Perform	Action	Expected Result
Navigate to the ILM-EIN Transaction	At the Remedy-ILM PC, ♦ File -> Open -> ILM-EIN Transaction-> New	ILM-EIN Transaction form is displayed.
Installing a Parent and all of its component – Installation is designed for updating property records to reflect installation of inventory items.	♦ Enter Parent EIN into the Parent EIN field ♦ Enter the Effective Date ♦ Select Installation from the list of Transaction Types ♦ Enter New ECS Name, New Location, New Building, and New room ♦ Press the Execute Transaction button on the bottom of the form. ♦ The ILM-TRS-Dialog form (Figure 27.3.3-4) displayed, asking the user “Would you like to perform another transaction?” and provides the following options: Same Parent EIN Another Parent EIN Exit EIN Transaction ♦ Press “Another Parent EIN” button to perform another transaction.	Remedy performs the following updates for the Parent EIN and all of its active components: ♦ ECS Name = New ECS Name ♦ Location = New Location ♦ Building = New Building ♦ Room = New Room ♦ Item Status = I (Install) ♦ Installation and Audit Date = Effective Date ♦ Writes an “INS” record in the transaction log to capture details of the event. This includes date/time of the event, operator initiating it, and ECS Name and Location values changes.
Moving a Parent and all of its components. EIN Movement is designed for updating property records when a Parent EIN and all of its children are being moved from one room within a site to another. NOTE: Use Shipment for inter-site movement.	♦ Enter Parent EIN into the Parent EIN field ♦ Enter the Effective Date ♦ Select Movement from the list of Transaction Types ♦ Enter New ECS Name, New Building, and New room ♦ Press the Execute Transaction button on the bottom of the form. ♦ The ILM-TRS-Dialog form (Figure 27.3.3-4) displayed, asking the user “Would you like to perform another transaction?” and provides the following options: Same Parent EIN Another Parent EIN Exit EIN Transaction ♦ Press “Another Parent EIN” button to perform another transaction.	Remedy performs the following updates for the Parent EIN and all of its active components: ♦ ECS Name = New ECS Name ♦ Building = New Building ♦ Room = New Room ♦ Item Status = I (Install) ♦ Installation and Audit Date = Effective Date ♦ Writes an “MV” record in the transaction log to capture details of the event. This includes date/time of the event, operator initiating it, and ECS Name and Location values changes.

NOTE: To move to the next field, use either the TAB key or the Mouse. The Enter key will not move the cursor to the next field.

Table 27.3.3-2. Procedures to Perform EIN Transactions (2 of 8)

Perform	Action	Expected Result
Shipping a Parent and all of its components	<ul style="list-style-type: none"> ◆ Enter Parent EIN into the Parent EIN field ◆ Enter the Effective Date ◆ Select Shipment from the list of Transaction Types ◆ Select P from the Ship (P)arent-(C)omponent field. ◆ Enter New ECS Name, New Location, New Building, and New room ◆ Press the Execute Transaction button on the bottom of the form. ◆ The ILM-TRS-Dialog form (Figure 27.3.3-4) displayed, asking the user “Would you like to perform another transaction?” and provides the following options: <ul style="list-style-type: none"> Same Parent EIN Another Parent EIN Exit EIN Transaction ◆ Press “Another Parent EIN” button to perform another transaction. 	<p>Remedy performs the following updates for the Parent EIN and all of its active components:</p> <ul style="list-style-type: none"> ◆ ECS Name = New ECS Name ◆ Location = New Location ◆ Building = New Building ◆ Room = New Room ◆ Item Status = I (Install) ◆ Installation and Audit Date = Effective Date ◆ Writes an “SHP” record in the transaction log to capture details of the event. This includes date/time of the event, operator initiating it, and ECS Name and Location values changes.

NOTE: To move to the next field, use either the TAB key or the Mouse. The Enter key will not move the cursor to the next field.

Table 27.3.3-2. Procedures to Perform EIN Transactions (3 of 8)

Perform	Action	Expected Result
Shipping Components only	<ul style="list-style-type: none"> ◆ Enter Parent EIN into the Parent EIN field ◆ Enter the Effective Date ◆ Select Shipment from the list of Transaction Types ◆ Select C from the Ship (P)arent-(C)omponent field. ◆ Enter New ECS Name, New Location, New Building, and New room ◆ Press the “Select Components To Process” button ◆ When the ILM-Join Process Component form (Figure 27.3.3.1-1) is displayed, find the component to be processed listed in the result list. ◆ Select Y from the Process field. ◆ Press the Save icon. ◆ When finished specifying components to process, close the ILM-Join Process Component form. ◆ Press the Execute Transaction button on the bottom of the ILM-EIN Transaction form. ◆ The ILM-TRS-Dialog form (Figure 27.3.3-4) displayed, asking the user “Would you like to perform another transaction?” and provides the following options: <ul style="list-style-type: none"> Same Parent EIN Another Parent EIN Exit EIN Transaction ◆ Press “Another Parent EIN” button to perform another transaction. 	<p>Remedy performs the following updates for the selected components:</p> <ul style="list-style-type: none"> ◆ Parent EIN = Blank ◆ ECS Name = New ECS Name ◆ Location = New Location ◆ Building = New Building ◆ Room = New Room ◆ Item Status = R (Receive) ◆ Installation date = Blank ◆ Audit Date = Effective Date ◆ Writes an “SHP” record in the transaction log to capture details of the event. This includes date/time of the event, operator initiating it, and ECS Name, Parent EIN, and Location values changes. ◆ Inactivate the selected components from the EIN Structure using the Effective Date as the Inactive date.

NOTE: To move to the next field, use either the TAB key or the Mouse. The Enter key will not move the cursor to the next field.

Table 27.3.3-2. Procedures to Perform EIN Transactions (4 of 8)

Perform	Action	Expected Result
Moving Parent and Components to stock	<ul style="list-style-type: none"> ◆ Enter Parent EIN into the Parent EIN field ◆ Enter the Effective Date ◆ Select Return To Stock from the list of Transaction Types ◆ Select P from the Return (P)arent-(C)omponent field. ◆ Enter New ECS Name, New Location, New Building, and New room ◆ Press the Execute Transaction button on the bottom of the form. ◆ The ILM-TRS-Dialog form (Figure 27.3.3-4) displayed, asking the user “Would you like to perform another transaction?” and provides the following options: <ul style="list-style-type: none"> Same Parent EIN Another Parent EIN Exit EIN Transaction ◆ Press “Another Parent EIN” button to perform another transaction. 	<p>Remedy performs the following updates for the Parent EIN and all of its active components:</p> <ul style="list-style-type: none"> ◆ ECS Name = IN STOCK ◆ Location = New Location ◆ Building = New Building ◆ Room = New Room ◆ Item Status = R (Receive) ◆ Installation Date = BLANK ◆ Audit Date = Effective Date ◆ Writes an “RTS” record in the transaction log to capture details of the event. This includes date/time of the event, operator initiating it, ECS Name, and Location values changes.

NOTE: To move to the next field, use either the TAB key or the Mouse. The Enter key will not move the cursor to the next field.

Table 27.3.3-2. Procedures to Perform EIN Transactions (5 of 8)

Perform	Action	Expected Result
Moving components to stock	<ul style="list-style-type: none"> ◆ Enter Parent EIN into the Parent EIN field ◆ Enter the Effective Date ◆ Select Return To Stock from the list of Transaction Types ◆ Select C from the Return (P)arent-(C)omponent field. ◆ Enter New Location, New Building, and New room ◆ Press the “Select Components To Process” button ◆ When the ILM-Join Process Component form (Figure 27.3.3.1-1) is displayed, find the component to be processed listed in the result list. ◆ Select Y from the Process field. ◆ Press the Save icon. ◆ When finished specifying components to process, close the ILM-Join Process Component form. ◆ Press the Execute Transaction button on the bottom of the ILM-EIN Transaction form. ◆ The ILM-TRS-Dialog form (Figure 27.3.3-4) displayed, asking the user “Would you like to perform another transaction?” and provides the following options: <ul style="list-style-type: none"> Same Parent EIN Another Parent EIN Exit EIN Transaction ◆ Press “Another Parent EIN” button to perform another transaction. 	<p>Remedy performs the following updates for the selected components:</p> <ul style="list-style-type: none"> ◆ Parent EIN = Blank ◆ ECS Name = IN STOCK ◆ Location = New Location ◆ Building = New Building ◆ Room = New Room ◆ Item Status = R (Receive) ◆ Installation Date = BLANK ◆ Audit Date = Effective Date ◆ Writes an “RTS” record in the transaction log to capture details of the event. This includes date/time of the event, operator initiating it, and ECS Name, Parent EIN, and Location values changes. ◆ Inactivate the selected components from the EIN Structure using the Effective Date as the Inactive date.

NOTE: To move to the next field, use either the TAB key or the Mouse. The Enter key will not move the cursor to the next field.

Table 27.3.3-2. Procedures to Perform EIN Transactions (6 of 8)

Perform	Action	Expected Result
Relocating components to a new EIN Structure	<ul style="list-style-type: none"> ◆ Enter Current Parent EIN into the Parent EIN field ◆ Enter the Effective Date ◆ Select Relocation from the list of Transaction Types ◆ Enter the new Parent EIN into the New Parent EIN field. ◆ Press the “Select Components To Process” button ◆ When the ILM-Join Process Component form (Figure 27.3.3.1-1) is displayed, find the component to be processed listed in the result list. ◆ Select Y from the Process field. ◆ Press the Save icon. ◆ When finished specifying components to process, close the ILM-Join Process Component form. ◆ Press the Execute Transaction button on the bottom of the ILM-EIN Transaction form. ◆ The ILM-TRS-Dialog form (Figure 27.3.3-4) displayed, asking the user “Would you like to perform another transaction?” and provides the following options: <ul style="list-style-type: none"> Same Parent EIN Another Parent EIN Exit EIN Transaction ◆ Press “Another Parent EIN” button to perform another transaction. 	<p>Remedy performs the following updates for the selected components:</p> <ul style="list-style-type: none"> ◆ Parent EIN = New Parent EIN ◆ ECS Name = New Parent’s ECS Name ◆ Location = New Parent’s Location ◆ Building = New Parent’s Building ◆ Room = New Parent’s Room ◆ Item Status = I (Install) ◆ Installation and Audit Date = Effective Date ◆ Writes an “REL” record in the transaction log to capture details of the event. This includes date/time of the event, operator initiating it, and ECS Name, Parent EIN and Location values changes. ◆ Inactivate the selected components from the Old EIN Structure using the Effective Date as the Inactive date. ◆ Add the selected components to the New EIN Structure using the Effective Date as the active date.

NOTE: To move to the next field, use either the TAB key or the Mouse. The Enter key will not move the cursor to the next field.

Table 27.3.3-2. Procedures to Perform EIN Transactions (7 of 8)

Perform	Action	Expected Result
Archiving a Parent and all of its components	<ul style="list-style-type: none"> ◆ Enter Parent EIN into the Parent EIN field ◆ Enter the Effective Date ◆ Select Archive from the list of Transaction Types ◆ Select P from the Archive (P)arent-(C)omponent field. ◆ Select the type of archive from the list of archive types: <ul style="list-style-type: none"> Return to Vendor (X) Trade in to Vendor (TV) Excess sold to vendor (S) Transferred to Government (G) Government Relieved from accountability (RG) ◆ Press the Execute Transaction button on the bottom of the form. ◆ The ILM-TRS-Dialog form (Figure 27.3.3-4) displayed, asking the user "Would you like to perform another transaction?" and provides the following options: <ul style="list-style-type: none"> Same Parent EIN Another Parent EIN Exit EIN Transaction ◆ Press "Another Parent EIN" button to perform another transaction. 	<p>Remedy performs the following updates for the Parent EIN and all of its active components:</p> <ul style="list-style-type: none"> ◆ ECS Name = ARCHIVE ◆ Location = EDFARC ◆ Building = BLANK ◆ Room = BLANK ◆ Item Status = Depends on type of archive selected. ◆ Installation Date = BLANK ◆ Audit Date = Effective Date ◆ Writes an "ARC" record in the transaction log to capture details of the event. This includes date/time of the event, operator initiating it, and ECS Name and Location values changes.

NOTE: To move to the next field, use either the TAB key or the Mouse. The Enter key will not move the cursor to the next field.

Table 27.3.3-2. Procedures to Perform EIN Transactions (8 of 8)

Perform	Action	Expected Result
Archiving components only	<ul style="list-style-type: none"> ◆ Enter Parent EIN into the Parent EIN field ◆ Enter the Effective Date ◆ Select Archive from the list of Transaction Types ◆ Select C from the Archive (P)arent-(C)omponent field. ◆ Select the type of archive from the list of archive types: <ul style="list-style-type: none"> Return to Vendor (X) Trade in to Vendor (TV) Excess sold to vendor (S) Transferred to Government (G) Government Relieved from accountability (RG) ◆ Press the “Select Components To Process” button ◆ When the ILM-Join Process Component form (Figure 27.3.3.1-1) is displayed, find the component to be processed listed in the result list. ◆ Select Y from the Process field. ◆ Press the Save icon. ◆ When finished specifying components to process, close the ILM-Join Process Component form. ◆ Press the Execute Transaction button on the bottom of the ILM-EIN Transaction form. ◆ The ILM-TRS-Dialog form (Figure 27.3.3-4) displayed, asking the user “Would you like to perform another transaction?” and provides the following options: <ul style="list-style-type: none"> Same Parent EIN Another Parent EIN Exit EIN Transaction ◆ Press “Another Parent EIN” button to perform another transaction. 	<p>Remedy performs the following updates for the selected components:</p> <ul style="list-style-type: none"> ◆ Parent EIN= Blank ◆ ECS Name = ARCHIVE ◆ Location = EDFARC ◆ Building = BLANK ◆ Room = BLANK ◆ Item Status = Depends on type of archive selected. ◆ Installation Date = BLANK ◆ Audit Date = Effective Date ◆ Writes an “ARC” record in the transaction log to capture details of the event. This includes date/time of the event, operator initiating it, and ECS Name, Parent EIN and Location values changes. ◆ Inactivate the selected components from the EIN Structure using the Effective Date as the Inactive date.

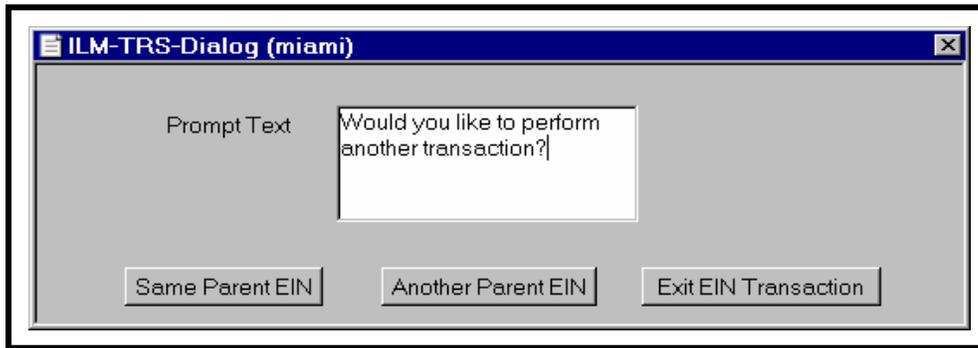


Figure 27.3.3-4. ILM-TRS Dialog GUI

27.3.3.1 ILM-Process Component GUI

The ILM-Process Component form (Figure 27.3.3.1-1) displays all the active components for the Parent EIN entered on the ILM-EIN Transaction form. The User may specify components to be processed by entering a "Y" in the Process field. This form can be accessed through the "Select Components To Process" button on the bottom of the ILM-EIN Transaction form. This button is only visible when the transaction is being performed on components. For example, when the user selects to return components (Return (P)arent-(C)omponent) to stock, or relocate components to a new EIN Structure, or archive components.

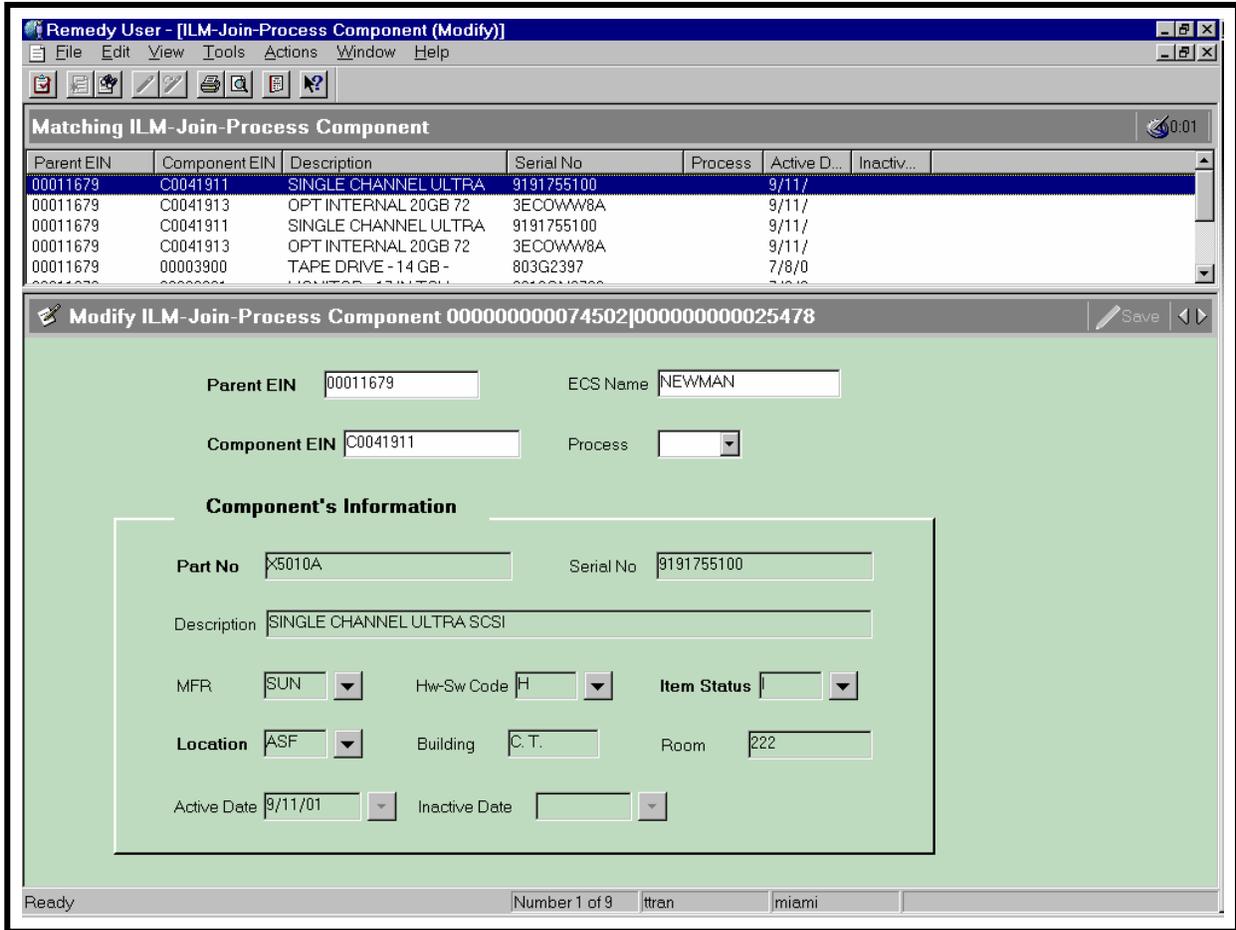


Figure 27.3.3.1-1. ILM-Process Component GUI

Table 27.3.3.1-1 describes the field definitions for the ILM-Process Component Form.

Table 27.3.3.1-1. ILM-Component to Process Field Descriptions

Field Name	Data Type	Size	Entry	Description
Parent EIN	Char	20	System-supplied	EIN for the parent item in an EIN structure.
ECS Name	Char	30	System-supplied	Name of the machine with which the item is associated.
Component EIN	Char	20	System-supplied	EIN for the Component item in an EIN structure.
Process	Char	1	Optional	Indicates whether or not a component is to be processed. Y = Yes, N = No.
Part No	Char	34	System-supplied	Manufacturer's or vendor's part number.
MFR	Char	6	System-supplied	Code for the manufacturer of the item.
Description	Char	60	System-supplied	Manufacturer's or vendor's description for the item.
Serial No	Char	30	System-supplied	Serial number of the item.
Item Status	Char	1	System-supplied	Code that designates the status of the item.
Location	Char	6	System-supplied	Identifier that designates an inventory location.
Room	Char	15	System-supplied	The room where the item can be found.
Active Date	Date		System-supplied	Date the item was added to the parent structure.
Inactive Date	Date		System-supplied	Date the component is no longer assigned to the EIN Structure.

27.3.4 ILM-Transaction Log

ILM-Transaction Log form (Figures 27.3.4-1) is designed for viewing/browsing all the EIN transactions performed on property records. Remedy logs the type of transaction, date/time, operator initiating the transaction, ECS name, Parent EIN, and location changes. In addition, this form also shows property record changes due to maintenance actions performed on inventory items (refer to section 27.4).

The screenshot shows a web browser window titled "Remedy User - [ILM-Transaction Log (New)]". The browser's address bar shows "http://155.157.31.23:8080/". The main content area is titled "New ILM-Transaction Log" and contains the following fields:

- Transaction No:
- Trans Type:
- Date-Time:
- Operator ID:
- EIN Information**
 - EIN:
 - ECS Name:
 - Serial No:
 - Part No:
 - Description:
 - MFR:
 - Item Status:
 - Location:
 - Building:
 - Room:
- From**
 - From Parent EIN:
 - From ECS Name:
 - From Location:
 - From Building:
 - From Room:
- To**
 - To Parent EIN:
 - To ECS Name:
 - To Location:
 - To Building:
 - To Room:

The status bar at the bottom shows "Ready", "ttran", and "155.157.31.23".

Figure 27.3.4-1. ILM-Transaction Log GUI

Table 27.3.4-1 describes the fields on the ILM-Transaction form.

Table 27.3.4-1. ILM-Transactions Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
Transaction No	Numeric	10	System-supplied	A system generated number that uniquely identifies the transaction.
Trans Type	Char	5	System-supplied	The type of transaction operators perform on an inventory item, including: INS - Install, MVE – Move, REL - Relocate, ARC – Archive, SHP – Ship, RTS – Return to Stock, MFS – Failed and Returned to Stock, MFV – Failed and returned to the vendor, MNS – New and came from stock, MNV – New and came from vendor, MRR – Relocate to a new Parent via the MWO, and MRS – Relocate to stock via the MWO.
Date-Time	Date		System-supplied	Date and time the transaction occurred.
Operator ID	Char	10	System-supplied	The operator id of the person who performed the transaction.
EIN	Char	20	System-supplied	The EIN number that the transaction performed on.
ECS Name	Char	30	System-supplied	Name of the machine with which the item is associated.
Serial No	Char	30	System-supplied	Serial number of the item.
Part No	Char	30	System-supplied	Manufacturer's or vendor's part number.
Description	Char	60	System-supplied	Manufacturer's or vendor's description of the item.
MFR	Char	6	System-supplied	Code for the manufacturer of the item.
Item Status	Char	2	System-supplied	Code that designates the status of the item. The following values are set when processing transactions: R = Received; SP = Spare Equipment; I = Installed; X = Returned to vendor; G = Transfer to Gov; TV = Trade in to Vendor; S = Excess sold to vendor; RG = Relieved from accountability
Location	Char	6	System-supplied	Identifier designates an inventory location.
Building	Char	6	System-supplied	Identifier for the building where the item can be found.
Room	Char	15	System-supplied	Identifier for the room where the item can be found.

Table 27.3.4-1. ILM-Transactions Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
From Parent EIN	Char	20	System-supplied	The parent EIN where the EIN originated.
To Parent EIN	Char	20	System-supplied	The new parent EIN where the EIN is locating.
To ECS Name	Char	30	System-supplied	Name of the machine with which the item is associated.
From Location	Char	6	System-supplied	The original location of the EIN.
To Location	Char	6	System-supplied	The new location of the EIN.
From Building	Char	6	System-supplied	The original building where the EIN was located.
To Building	Char	6	System-supplied	The new building where the EIN is located.
From Room	Char	15	System-supplied	The original room where the EIN was located.
To Room	Char	15	System-supplied	The new room where the EIN is located.

Table 27.3.4-2. Procedures to Generate EIN Shipment Report

Perform	Action	Expected Result
Navigate to the ILM-Transaction Log Form	At the Remedy-ILM PC, <ul style="list-style-type: none"> ◆ File -> Open -> ILM-Transaction Log -> Search 	<ul style="list-style-type: none"> ◆ ILM-Transaction Log form is displayed.
Run ECS Shipping Report	<ul style="list-style-type: none"> ◆ Enter SHP into the Trans Type field. ◆ Use the Advance Search Bar to specify the Date-time period to report and click the search button. ◆ When the records are displayed, make sure to un-select the highlighted record by pressing the Ctrl and single-click the highlighted item simultaneously. ◆ Tools - > Reporting - > ECS Shipping Report - > Report - > Preview ◆ When the report is displayed, user has the option to either print the report by pressing the print icon or export the report into a file by pressing the Export Icon next to the print icon. ◆ Close the report preview. 	<ul style="list-style-type: none"> ◆ The ECS Shipping Report is displayed. See Figure 27.3.4-3 for the report layout.

NOTE: To move to the next field, use either the TAB key or the Mouse. The Enter key will not move the cursor to the next field.

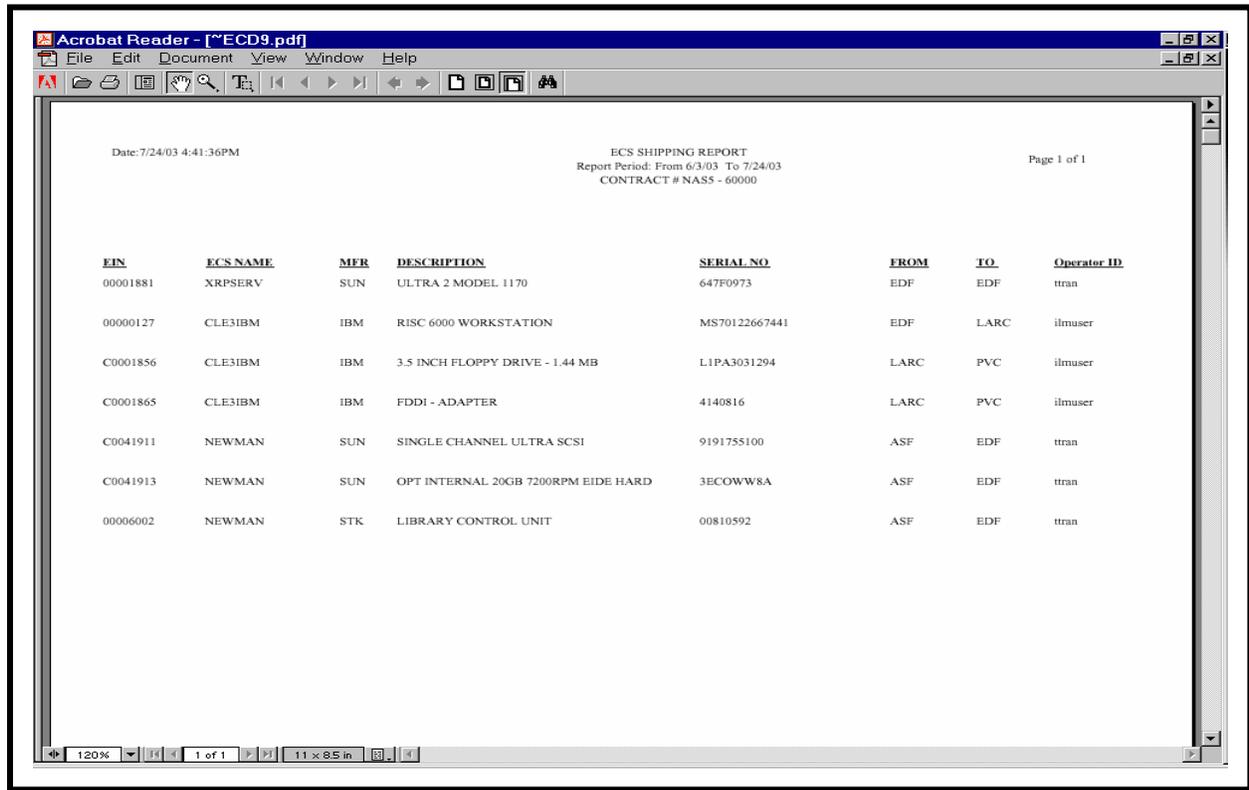


Figure 27.3.4-3. ECS Shipping Report GUI

27.3.5 ILM-OEM Parts

Property Administrator uses the ILM-OEM Parts form (Figure 27.3.5-1) to maintain standardized information about manufacturer's parts. Part information must be recorded before they can be added to an inventory item.

The screenshot shows a web browser window titled "Remedy User - [ILM-OEM Parts (New)]". The browser's menu bar includes "File", "Edit", "View", "Tools", "Actions", "Window", and "Help". Below the menu bar is a toolbar with various icons. The main content area has a title bar that says "New ILM-OEM Parts" and a "Save" button. The form itself is titled "OEM Part Information" and contains the following fields:

- Part No:
- MFR:
- Hw-Sw Code:
- Description:
- Mod-Ver:
- Create Date:
- Submitter:
- Last Modified By:

The status bar at the bottom of the browser window shows "Ready" on the left, and "ttran" and "miami" in the middle.

Figure 27.3.5-1. ILM-OEM Parts GUI

Table 27.3.5-1 describes the fields on the ILM-OEM Parts form.

Table 27.3.5-1. ILM-OEM Parts Field Descriptions

Field Name	Data Type	Size	Entry	Description
Part No	Char	34	Required	Manufacturer's or vendor's part number for an item.
MFR	Char	6	Required	Code for the manufacturer of the item. The MFR code must exist in the ILM-Vendor-MFR form.
Hw-Sw Code	Char	2	Required	Code for classifying items according to source of maintenance costs. The Hw-Sw Code must exist in the ILM-HwSw Code Form.
Description	Char	60	Optional	Manufacturer's or vendor's description of the item.
Mod-Ver	Char	24	Optional	Model or version of the item.
Submitter	Char	30	System-supplied	The user whom created the record.
Create Date	Date		System-supplied	Date the record was created.
Last Modified By	Char	30	System-supplied	The user last modified the record.

27.3.6 ILM-Vendor-MFR GUI

The ILM-Vendor-MFR form (Figure 27.3.6-1) allows operators to define valid vendor codes for used with EIN records and OEM parts records. The operator enters or modifies the fields for this screen as required (see Table 27.3.6-1).

The screenshot shows a Windows-style application window titled "Remedy User - [ILM-Vendor-MFR (New)]". The window has a menu bar with "File", "Edit", "View", "Tools", "Actions", "Window", and "Help". Below the menu bar is a toolbar with various icons. The main content area has a title bar that says "New ILM-Vendor-MFR" and a "Save" button. The main area has a light green background with the heading "Vendor and Manufacturer Codes". Inside this area is a white-bordered form with the following fields:

- Vendor ID:
- Vendor Name:
- Submitter: Create Date: ...
- Last Modified By:

The status bar at the bottom of the window shows "Ready" on the left, and "ttran" and "miami" in the middle.

Figure 27.3.6-1. ILM-Vendor-MFR GUI

Table 27.3.6-1 describes the fields on the ILM-Vendor-MFR form.

Table 27.3.6-1. ILM-Vendor-MFR Field Descriptions

Field Name	Data Type	Size	Entry	Description
Vendor ID	Char	6	Required	Code for a vendor from whom items are purchased.
Vendor Name	Char	30	Required	Full name of a vendor from who items are purchased.
Submitter	Char	30	System-supplied	The user whom created the record.
Create Date	Date		System-supplied	Date the record was created.
Last Modified By	Char	30	System-supplied	The user last modified the record.

27.3.7 ILM-HwSw Codes GUI

Operators use this form (Figure 27.3.7-1) to maintain a standard set of codes for distinguishing items according to source of maintenance costs. These codes are associated with EIN items and are essential for grouping inventory items for reporting and browsing.

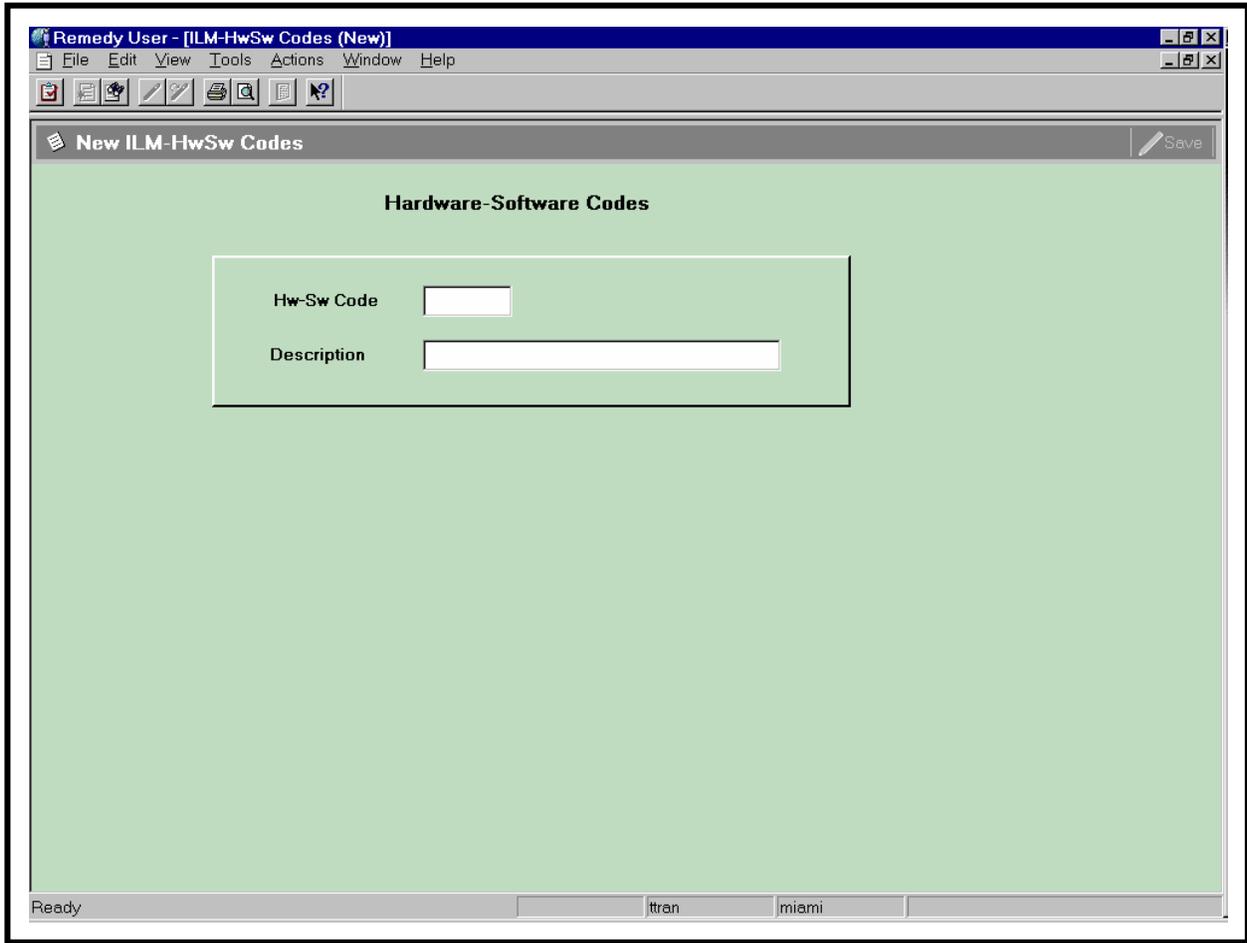


Figure 27.3.7-1. ILM-HwSw Codes GUI

Table 27.3.7-1 describes the fields on the ILM-HwSw Codes form.

Table 27.3.7-1. ILM-HwSw Codes Field Descriptions

Field Name	Data Type	Size	Entry	Description
Hw/Sw Code	Char	2	Required	Code for classifying items according to source of maintenance costs.
Description	Char	30	Required	Description for the Hardware/Software code.

27.3.8 ILM-Status Codes GUI

The ILM-Status Codes form (Figure 27.3.8-1) maintains a set of standardized codes for identifying valid inventory item states in the inventory and logistics life cycle.

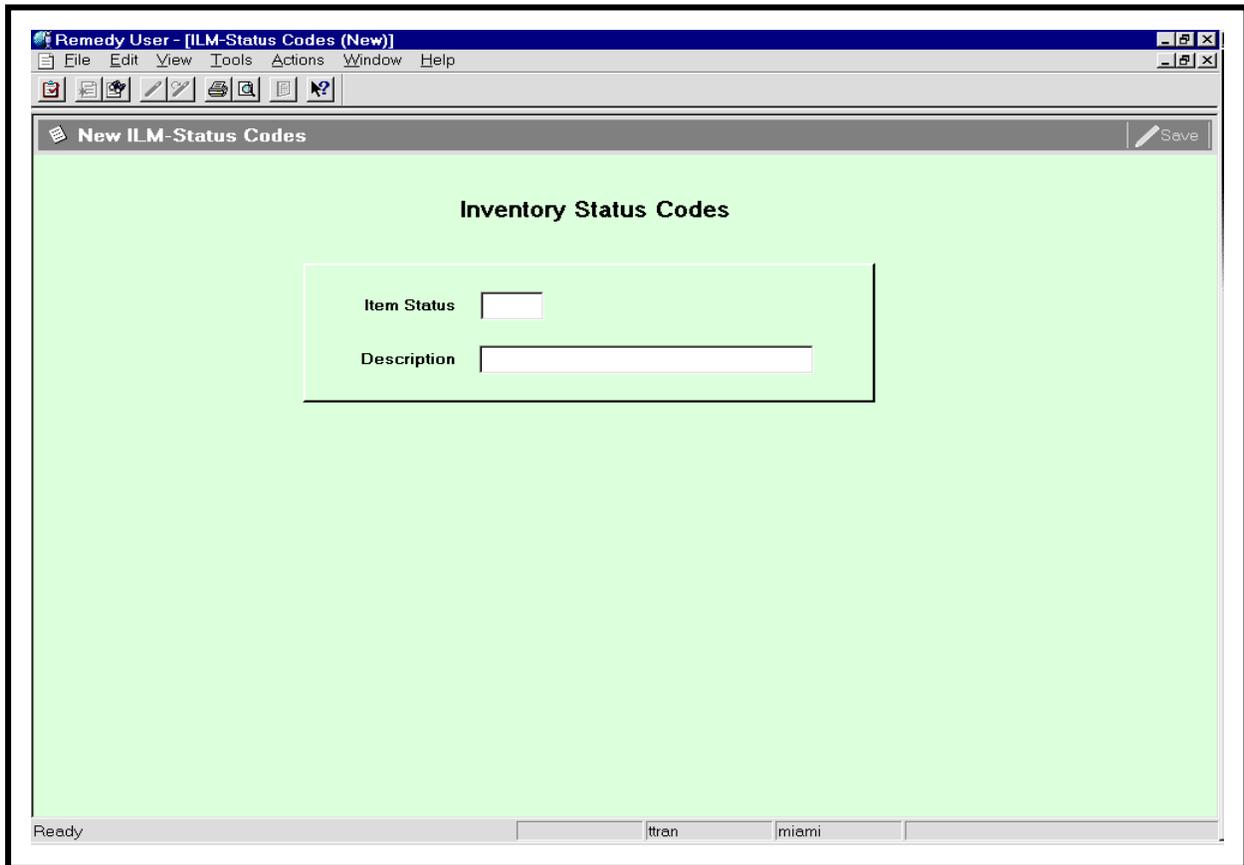


Figure 27.3.8-1. ILM-Status Codes GUI

Table 27.3.8-1 describes the fields on the ILM-Status Codes form.

Table 27.3.8-1. ILM-Status Codes Field Descriptions

Field Name	Data Type	Size	Entry	Description
Item Status	Char	6	Required	Code for an inventory status for an item.
Description	Char	30	Required	Description for the code.

27.3.9 ILM-Maint Contract GUI

The ILM-Maint Contract form (Figures 27.3.9-1 to 27.3.9.3) provides the ability to track information about maintenance contracts with vendors and suppliers. The contract ID is the key field and should be the actual number that purchasing or the vendor assigns. The data entered here supports data entry for the ILM-EIN form (section 27.3.1). User may run a Maintenance Contract report that lists all EIN records that the individual maintenance contract covers. Table 27.3.9-2 provides instruction on how to run this report.

The screenshot shows a web browser window titled "Remedy User - [ILM-Maint Contract (Search)]". The browser's address bar and menu bar are visible. The main content area is a search form for "Search ILM-Maint Contract". The form includes a "Contract ID" input field at the top. Below it are three tabs: "Purchasing Information", "EINs Covered", and "License Entitlement Cover". The "Purchasing Information" tab is active and contains several fields: "PO Number" (text input), "Vendor ID" (dropdown menu), "Maint Vendor ID" (dropdown menu), "Start Date" (dropdown menu), "Expiration Date" (dropdown menu), "Type of Support" (text input), "Comment" (text input), "Submitter" (text input), "Create Date" (text input with a calendar icon), and "Last Modified By" (text input). The status bar at the bottom of the browser window shows "Ready", the user name "ttran", and the IP address "155.157.31.23".

Figure 27.3.9-1. ILM-Maint Contract GUI (1 of 3)

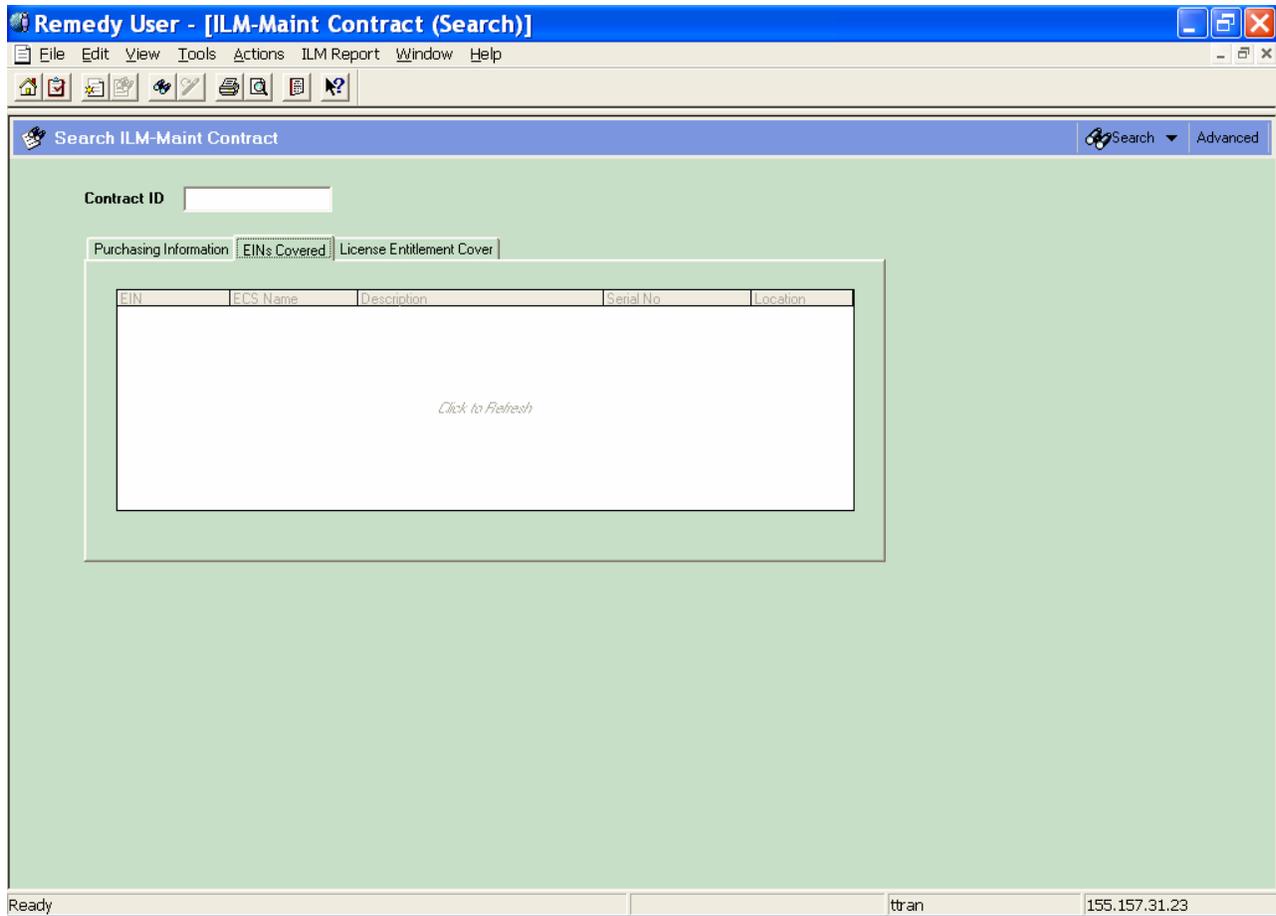


Figure 27.3.9-2. ILM-Maint Contract GUI (2 of 3)

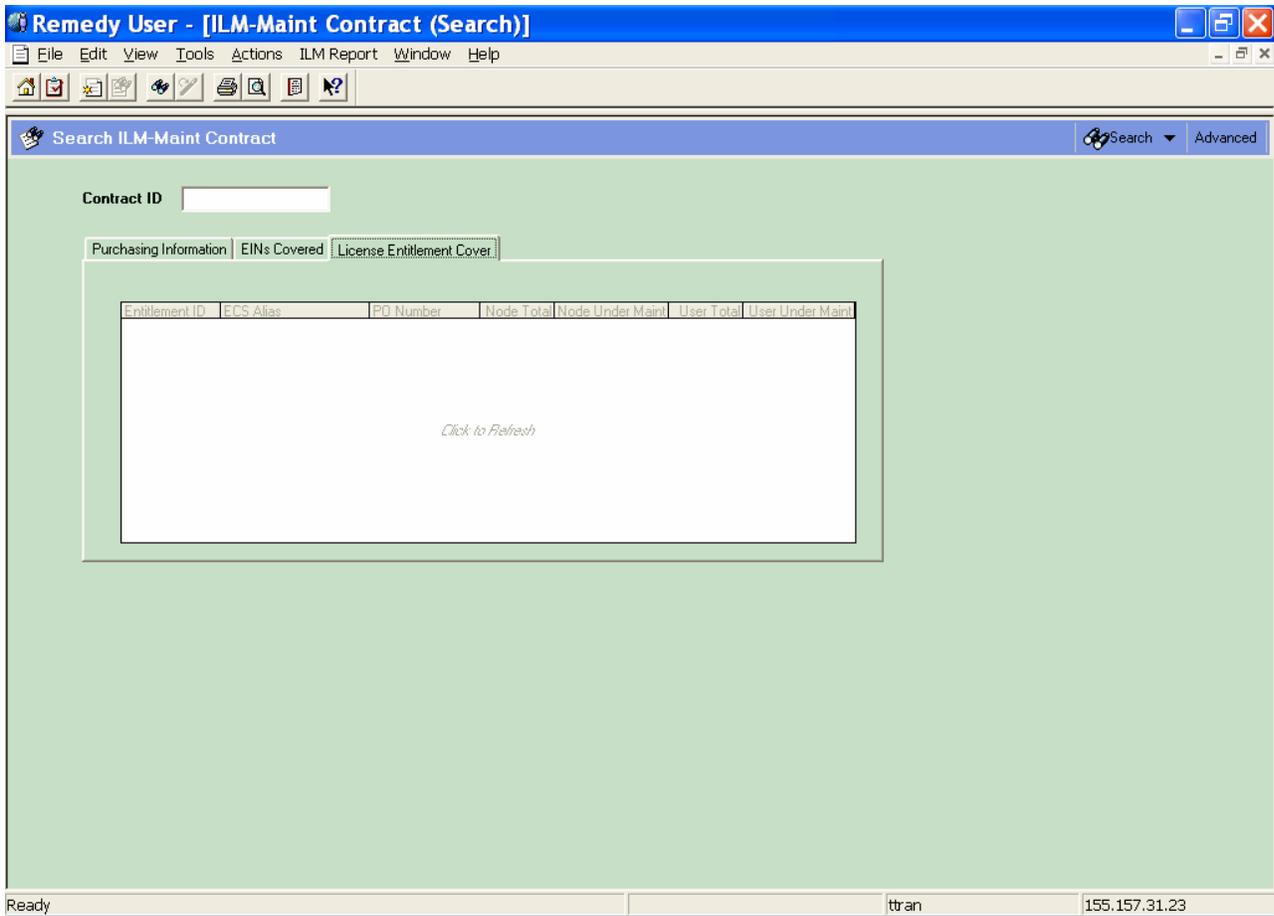


Figure 27.3.9-3. ILM-Maint Contract GUI (3 of 3)

Table 27.3.9-1 describes the field descriptions for the ILM-Maint Contract form.

Table 27.3.9-1. ILM-Maint Contract Field Descriptions

Field Name	Data Type	Size	Entry	Description
Contract ID	Char	10	Required	Identifier for the maintenance contract as assigned by purchasing or provided by the vendor.
PO Number	Char	10	Required	Purchase order number of the purchase order that procured the maintenance coverage.
Vendor ID	Char	6	Optional	Code for the vendor with whom the contract is placed.
Maint Vendor ID	Char	6	Optional	Code for the vendor whom will provide the services.
Start Date	Date		Optional	Date the contract is to become effective.
Expiration Date	Date		Required	Date the contract will expire.
Type of Support	Char	40	Optional	Type of support procured.
Comment	Char	60	Optional	Miscellaneous information specific to the maintenance contract.
EINs Covered	Table field		System-supplied	Field for displaying the EINs covered under the maintenance contract.
License Entitlement Cover	Page		System-supplied	Page for displaying the license entitlements covered under the maintenance contract.
Submitter	Char	30	System-supplied	The user whom created the record.
Create Date	Date		System-supplied	Date the record was created.
Last Modified By	Char	30	System-supplied	The user last modified the record.

Table 27.3.9-2. Procedures to Generate Maintenance Contract Report

Perform	Action	Expected Result
Navigate to the ILM-Maint Contract Form	At the Remedy-ILM PC, <ul style="list-style-type: none"> ◆ File -> Open -> ILM-Maint Contract -> Search 	◆ ILM-Maint Contract form is displayed.
Run Maintenance Contract Report	<ul style="list-style-type: none"> ◆ Find the Maintenance Contract of interest ◆ ILM Report - > Maintenance Contract Report ◆ When the report is displayed, user has the option to either print the report by pressing the print icon or export the report into a file by pressing the Export Icon next to the print icon. ◆ Close the report preview. 	◆ The Maintenance Contract Report is displayed. See Figure 27.3.9-3 for the report layout.

NOTE: To move to the next field, use either the TAB key or the Mouse. The Enter key will not move the cursor to the next field.

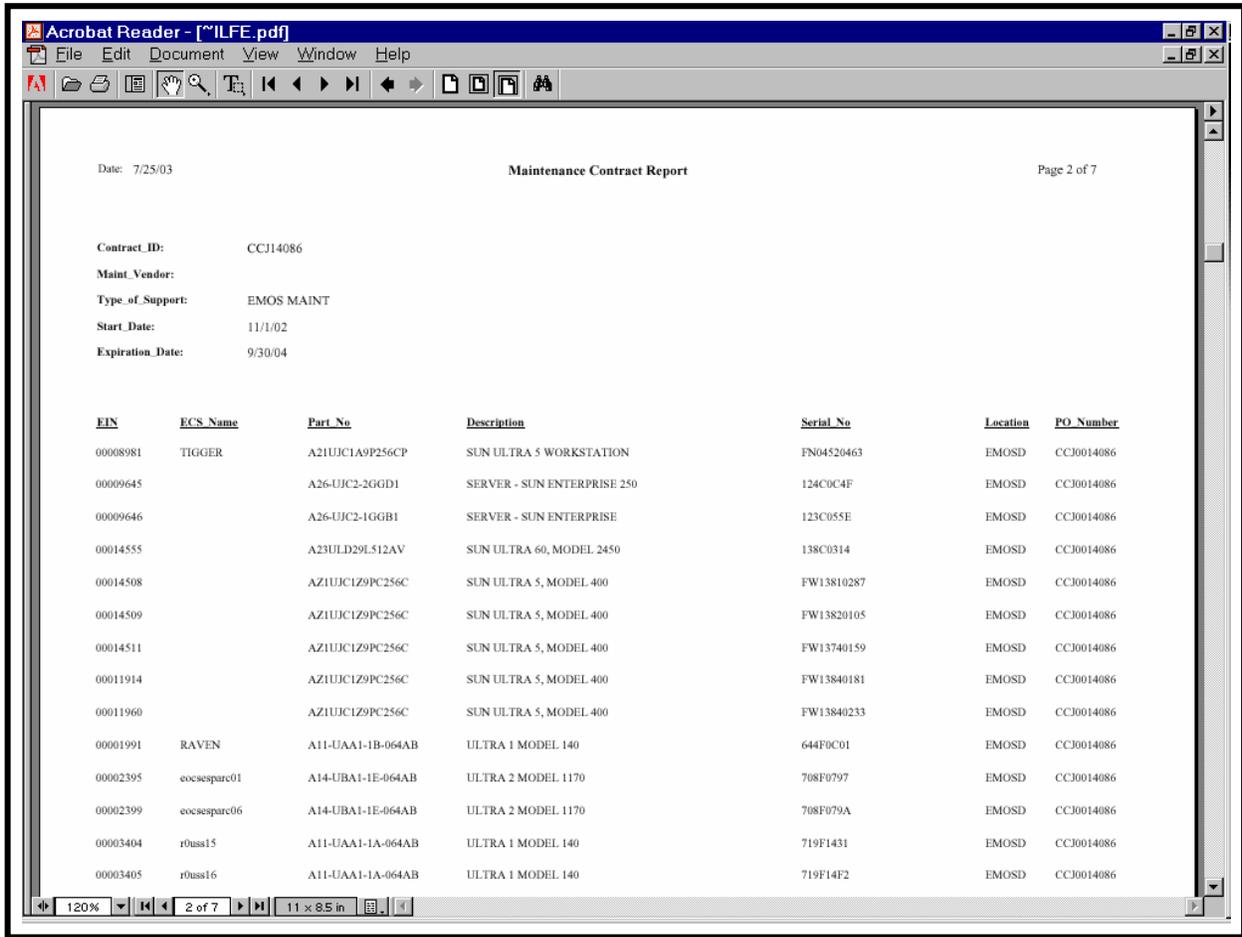


Figure 27.3.9-3. Maintenance Contract Report GUI

27.3.10 ILM-Sites GUI

This form (Figure 27.3.10-1) allows operators to maintain a set of valid standard codes and descriptions for identifying new sites. Each code represents one site.

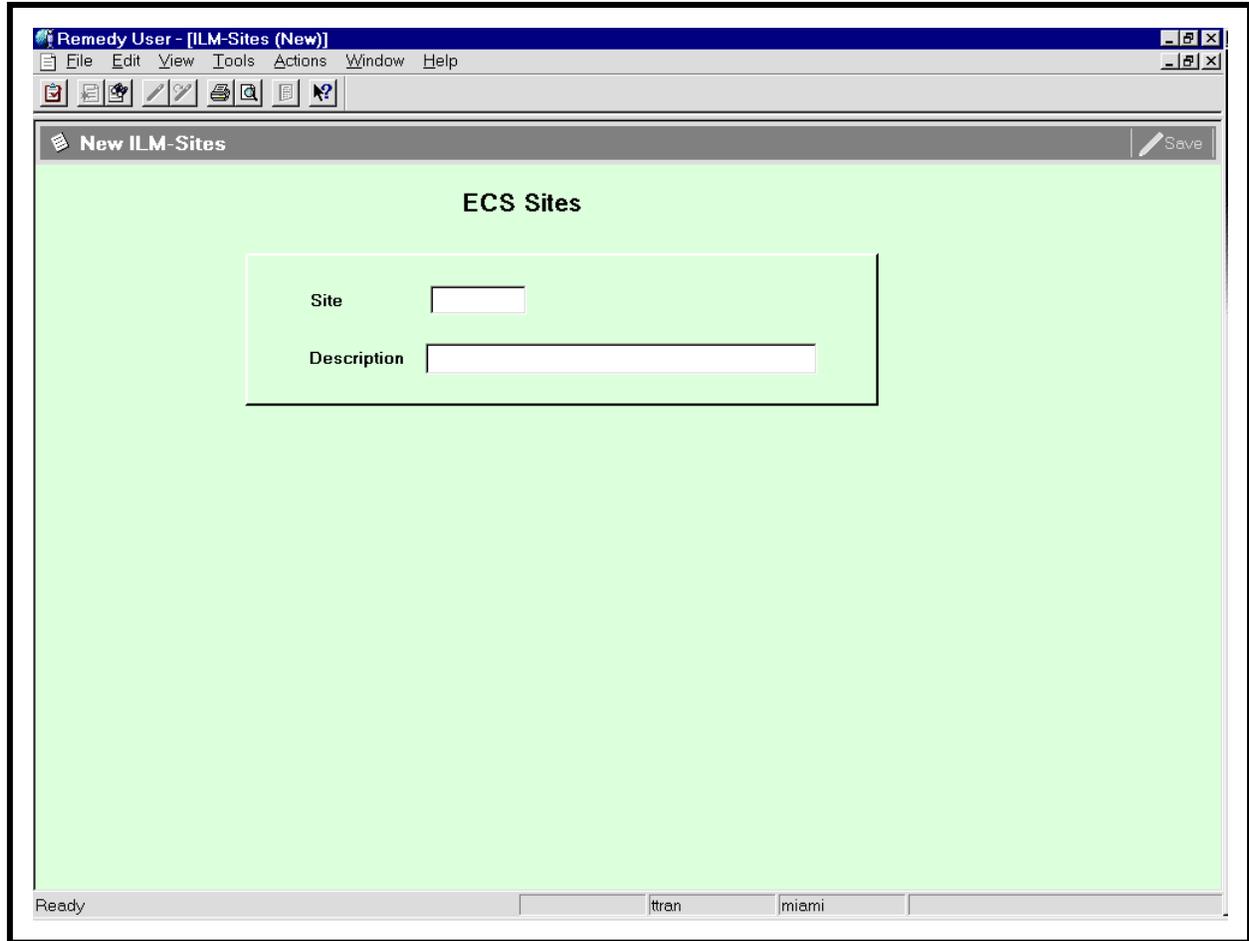


Figure 27.3.10-1. ILM-Sites GUI

Table 27.3.10-1 describes the fields on the ILM-Sites form.

Table 27.3.10-1. ILM-Sites Field Descriptions

Field Name	Data Type	Size	Entry	Description
Site	Char	6	Required	Code for a site.
Description	Char	40	Required	Description of the site.

27.3.11 ILM-Inventory Location GUI

The form shown in Figure 27.3.11-1 is used to maintain information about EMD inventory locations. This standardized information is available to other screens and reports, which can access it by reference to a location.

NOTE: An important distinction is made in Remedy between a site and an inventory location. Sites are officially designated by NASA and generally include the SMC, DAACs, and other official support installations. EMD Property Administrators designate inventory locations for purposes of property management. They are typically facilities or locales where inventory items are stored or installed, and more than one can exist at a site. Inventory locations are sometimes assigned the same names and codes as a site, but Remedy ILM treats the two as different entities.

The screenshot shows a Windows-style application window titled "Remedy User - [ILM-Inventory Location (New)]". The window has a menu bar with "File", "Edit", "View", "Tools", "Actions", "Window", and "Help". Below the menu bar is a toolbar with icons for Save, Print, Copy, Paste, Undo, Redo, and Help. The main content area is titled "New ILM-Inventory Location" and contains a "Save" button. The form is titled "Inventory Location" and has four fields: "Location" (text input), "Building" (text input), "Site" (dropdown menu), and "Description" (text input). The status bar at the bottom shows "Ready", "ttran", and "miami".

Figure 27.3.11-1. ILM-Inventory Location GUI

Table 27.3.11-1 describes the fields on the ILM-Inventory Location form

Table 27.3.11-1. ILM-Inventory Location Field Descriptions

Field Name	Data Type	Size	Entry	Description
Location	Char	6	Required	Identifier for the inventory location where material can be found.
Building	Char	6	Optional	Building where the inventory items can be found.
Description	Char	30	Required	Description for the location id.
Site	Char	6	Required	Code for the site hosting the inventory location.

27.4 Maintenance Management

Maintenance Work Orders (MWOs) are used for collecting downtime information for equipment subject to Reliability, Maintainability, and Availability (RMA) reporting as well as to identify equipment that has failed and/or been replaced during system maintenance. By way of a special feature available to the ILM-MWO and the ILM-MWO Line Item forms, operators can have the system update property records automatically based on the maintenance activities a work order describes. The following sections will describe maintenance work orders in detail.

27.4.1 ILM-MWO GUI

The ILM-MWO form (Figures 27.4.1-1 through 27.4.1-5) provides the ability to create and update maintenance work orders as maintenance activity proceeds and as additional information about the repair becomes known. It also has a special feature that updates property records on demand based on events and data described about a work order's line items.

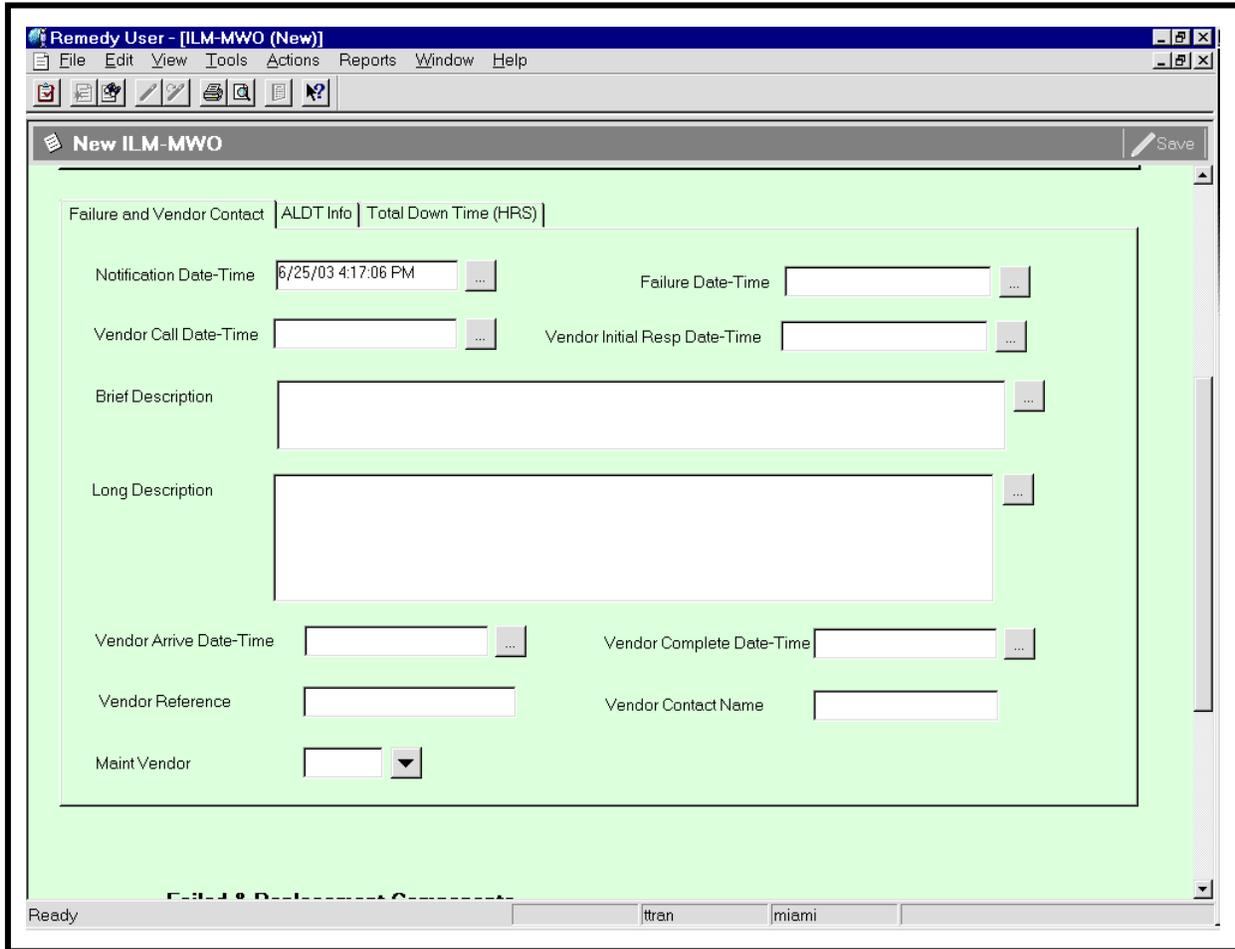


Figure 27.4.1-2. ILM-MWO GUI - Failure and Vendor Contact

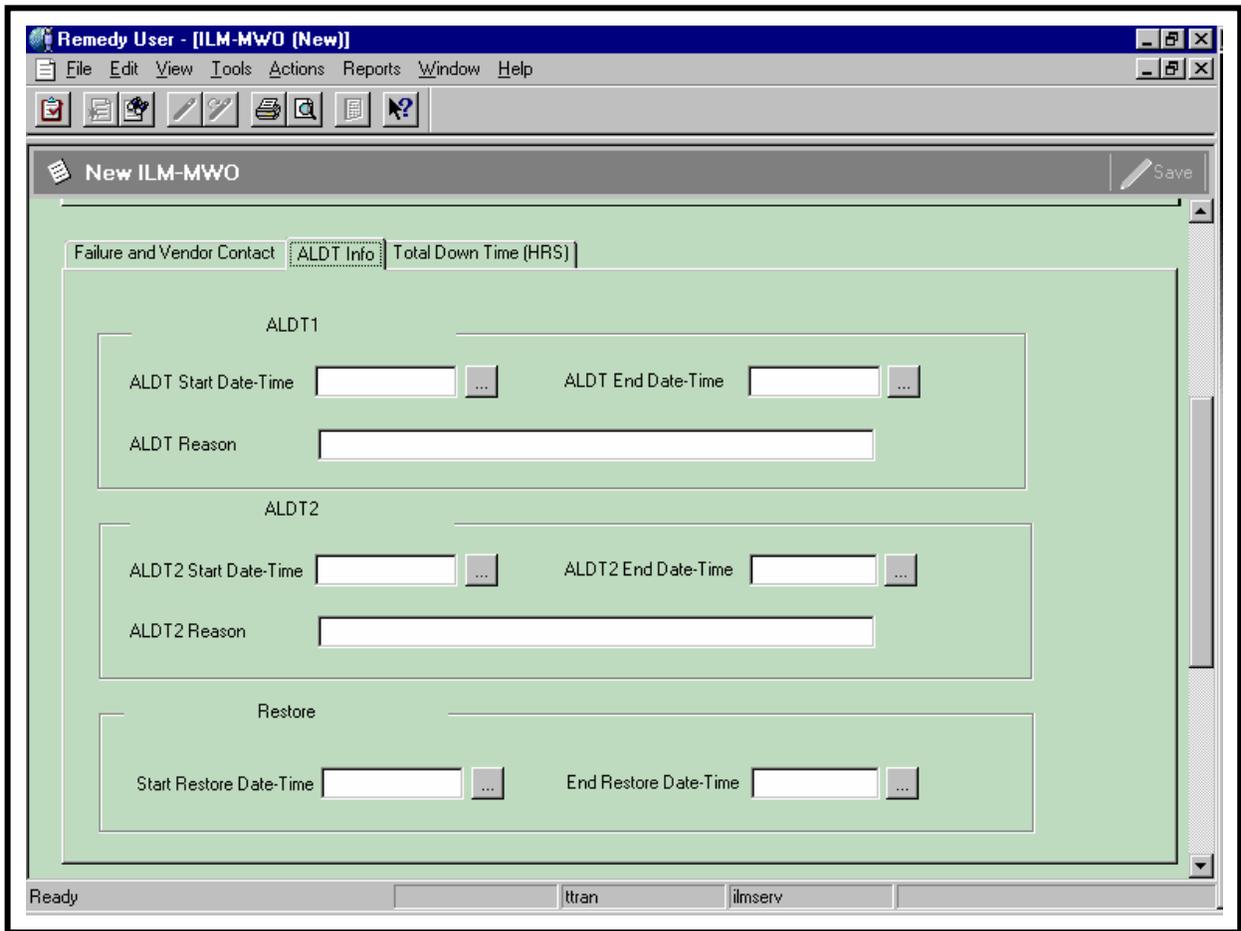


Figure 27.4.1-3. ILM-MWO GUI – ALDT

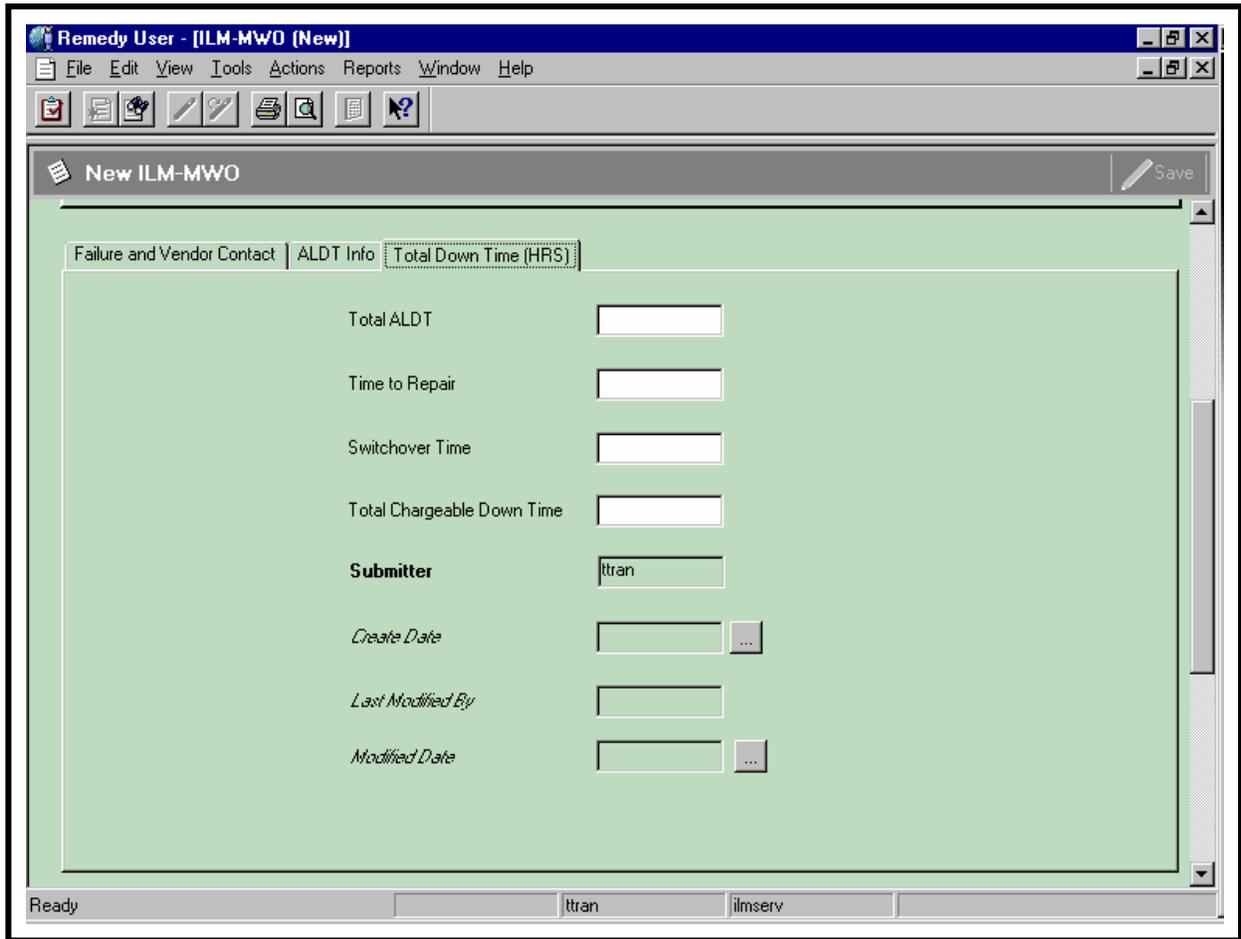


Figure 27.4.1-4. ILM-MWO GUI - Total Down Time

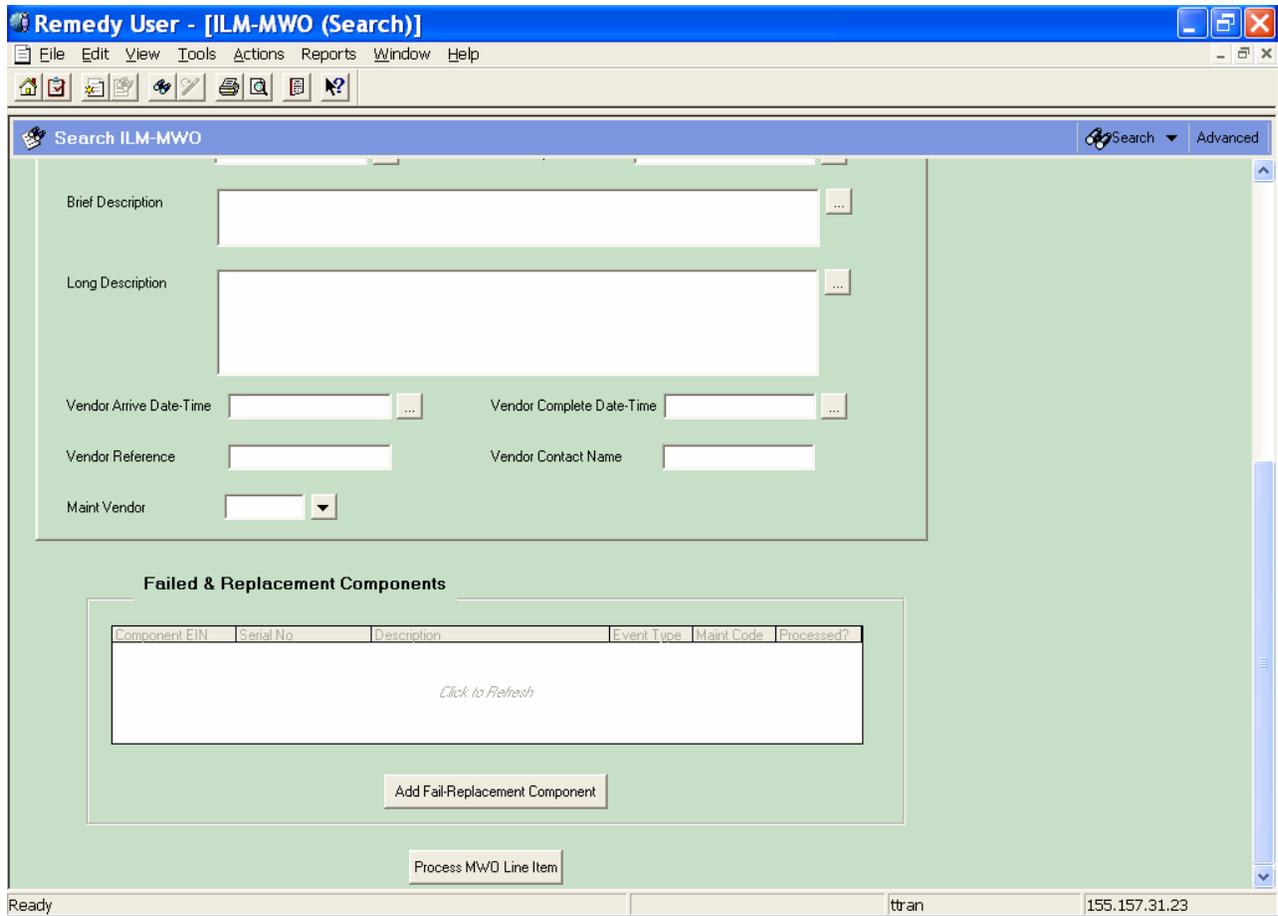


Figure 27.4.1-5. ILM-MWO GUI - Failed & Replacement Components

Table 27.4.1-1 describes the fields on the ILM-MWO Form.

Table 27.4.1-1. ILM-MWO Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
Work Order No	Char	10	Optional	Identifier for the work order. The work order no is prefixed with site's first three letters.
MWO Status	Char	1	Optional; O, A, F, or R	Code for the status of the work order. O = Open; A = Audit; F=Finish; R = Retired.
Priority	Char	1	Optional	Code for the priority assigned to the work.
Parent EIN	Char	20	Required	EIN for the parent item in an EIN structure.
System Serial Number	Char	30	System-supplied	Serial number of the item entered as Parent EIN.
ECS Name	Char	30	System-supplied from EIN record	Name of the machine with which the item is associated.
Part No	Char	34	System-supplied from EIN record	Manufacturer's part number for the item entered as Parent EIN.
Description	Char	60	System-supplied from EIN record	Manufacturer's description for the item entered as Parent EIN.
Location	Char	8	System-supplied from EIN record	Designator for the location where the item entered as Parent EIN is situated.
Room	Char	6	System-supplied from EIN record	Room in which the item entered as Parent EIN is situated.
Notification Date-Time	Date-Time		Optional	The date and time problem was reported. This field is initialized with the current date and time but can be modified.
Failure Date-Time	Date-Time		Optional	Date and time that the failure occurred. The earliest between the following: 1) the time the LMC (Local Maintenance Coordinator) is notified or 2) the time the hardware problem is first recognized.
Brief Description	Char	140	Optional	A brief description of the problem and resolution.
Long Description	Char	1024	Optional	A long description of the problem and resolution relevant to the maintenance event.

Table 27.4.1-1. ILM-MWO Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
Vendor Call Date-Time	Date-Time		Optional	The date and time the maintenance vendor was called.
Vendor Initial Resp Date-Time	Date-Time		Optional	Indicate the vendor initial response date and time to the service call.
Vendor Arrive Date-Time	Date-Time		Optional	The date and time the maintenance vendor actually arrived to perform the repairs.
Vendor Complete Date-Time	Date-Time		Optional	Date and time the repair was completed.
Vendor Contact Name	Char	30	Optional	Vendor point of contact.
Vendor Reference	Char	20	Optional	Identifier to the reference when contacting the vendor about the problem with the item.
ALDT Start Date-Time	Date-Time		Optional	The date and time a delay in repairing the system began.
ALDT End Date-Time	Date-Time		Optional	The date and time a delay in repairing the system ended.
ALDT Reason	Char	60	Optional	A code for the reason a delay was encountered.
Start Restore Date-Time	Date-Time		Optional	The date and time when start restoring the failed system.
End Restore Date-Time	Date-Time		Optional	The date and time end restoring the system.
Total ALDT	Real	5.2	Optional	Total Administrative logistic delay time (ALDT) Specified in hours.
Time To Repair	Real	5.2	Optional	Time required to effect the repair. Specified in hours.
Switchover Time	Real	5.2	Optional	Time required for system switch-over. Specified in hours.
Total Chargeable Down Time	Real	5.2	Optional	Time to be charged for downtime. Specified in hours.
Submitter	Char	30	System-supplied	The user whom created the record.
Create Date	Date		System-supplied	Date the record was created.
Last Modified By	Char	30	System-supplied	The name of the user who last changed this record.
Modified Date	Date		System-supplied	The last date the record was modified.
Failed & Replacement Components	Table field		System-supplied	Field for displaying the failed and replacement components.

The following buttons/functions are unique to the ILM-MWO form:

- Add Fail/Replacement Component - provides access to the ILM-MWO Line Item Form (Figure 27.4.2-1) for adding data about components involved in individual maintenance actions.
- Process MWO Line Item - The Process MWO Line Item button provides a convenient, reliable, and efficient means for updating ILM property records based on information contained in ILM-MWO line item form. New EIN records are created as necessary, as are corresponding Part No and EIN structure records. Processing adds new items to the inventory, archives those that have failed or been returned to the vendor, and re-assigns any that have been relocated or returned to stock. Additionally, items returned to a vendor are rendered obsolete with respect to their parent EINs and, of those that had failed, costs are transferred to their replacements. If Remedy is to update property records based on ILM-MWO line item data, line item records must specify values for Event Type and Maint Code. They determine the type of property record changes to be made. (See Table 27.4.2-2) Additionally, operators must supply a value for New Parent EIN if an item is designated for relocation. Other line item fields, such as Component EIN, Change Date, Replacement's EIN, New Location, and New Room, have special significance as well in that they influence which database records actually change.

Table 27.4.1-2. Procedure to Add a New Work Order

Perform	Action	Expected Result
Navigate to the ILM-MWO Form	At the Remedy-ILM PC, <ul style="list-style-type: none"> ◆ File -> Open -> ILM-MWO -> New 	ILM-MWO form is displayed and ready for the user to add a new MWO record.
Creating a new work order	Fill in the necessary information: <ul style="list-style-type: none"> ◆ Work Order No – User may enter a Work Order No or leave this field blank. Leaving this field blank, the system will generate a Site's prefix work order no. ◆ Select the Work Order Status from the MWO Status field. The default is "O" for Open. ◆ Select a priority from the list of priority: <ul style="list-style-type: none"> Enter a 1 for any malfunction that results in down time of a production system and immediate correction is needed. Enter a 2 for any malfunction that impairs system performance but does not result in down time; however, may result in down time if system must be brought down to fix the problem. Enter a 3 for any malfunction that will not result in system down time (e.g. minor flickering screen, key sticking, sticking mouse, etc...) ◆ Enter Parent EIN number ◆ Complete the Failure and Vendor Contact Information, ALDT, and Total Down Time sections. ◆ Click on the Save icon on the tool bar to save the record. 	<ul style="list-style-type: none"> ◆ When the Parent EIN is entered and the Parent EIN existed in the ILM-EIN form, the system will populate the Parent Information section with the information about the entered Parent EIN. ◆ The system will generate the next Site's prefixed Work Order number after the record is saved. The newly created Work Order number is displayed in the Status bar on the bottom left of the form.

NOTE: To move to the next field, use either the TAB key or the Mouse. The Enter key will not move the cursor to the next field.

Table 27.4.1-3. Procedures to Generate ILM-MWO Predefined Reports

Perform	Action	Expected Result
Navigate to the ILM-MWO Form	At the Remedy-ILM PC, ♦ File -> Open -> ILM-MWO -> Search ♦ Perform a Search for the records to be reported.	♦ ILM-MWO form is displayed.
Run Work Order Verification Report	♦ Find the Work Order of Interest ♦ When the records are displayed, Reports -> Work Order Verification ♦ When the report is displayed, user has the option to either print the report by pressing the print icon, or user may export the report into a file by pressing the Export Icon next to the print icon. ♦ Close the report preview.	♦ The Work Order Verification Report is displayed. Refer to Figure 27.4.1-6 for the report layout.
Run an RMA report and export into MS Excel	♦ Select the records of interest to perform the report on. ♦ When the record is displayed, make sure to un-select the highlighted record by pressing the Ctrl and single-click the highlighted item simultaneously. ♦ Tools -> Reporting -> Rma_Rpt -> Report -> Export To -> File ♦ When the Report to File GUI (see Figure 27.3.1.1-3) is displayed. Select the appropriate directory to save the report in Enter a report file name Save as Type = All File (*.*) Warning: The report will not work if the Save as Type is anything else other than All File. Press the Save button ♦ Bring up MS Excel ♦ File -> Open -> <Report Name> ♦ When the Text Import Wizard GUI is displayed: Delimiters -> Next Select Tab -> Next Change the EIN, Parent EIN, Part No, and Serial No fields to Text. This will keep all the leading zeros. Click on the Finish button	♦ The RMA report is displayed. User may make any necessary adjustment to this report. Please refer to MS Excel help for any question on how to use MS Excel. Refer to Figure 27.4.1-7 for the report layout.

NOTE: To move to the next field, use either the TAB key or the Mouse. The Enter key will not move the cursor to the next field.

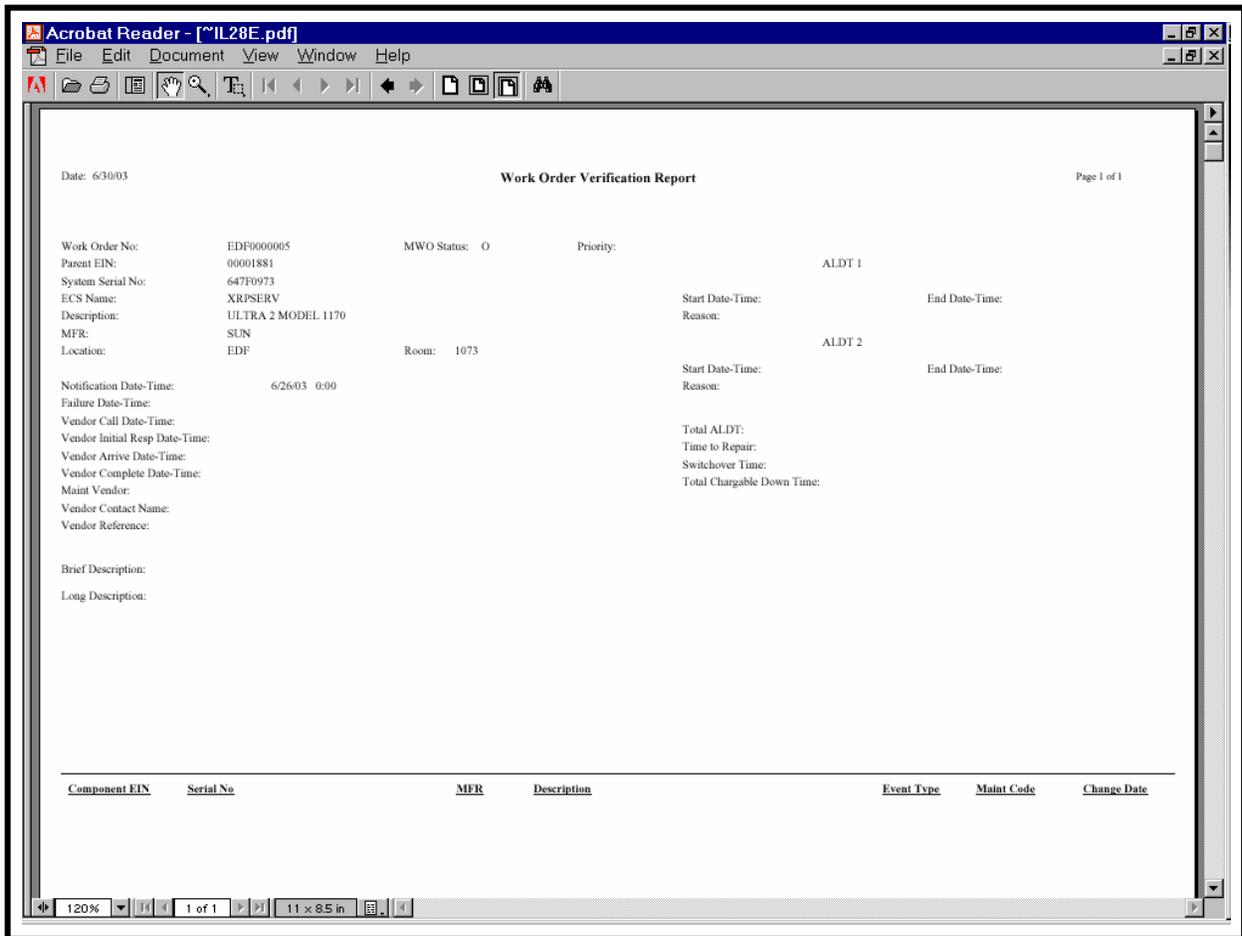


Figure 27.4.1-6. Work Order Verification Report GUI

Work Order	MFR	DESCRIPTION OF SYSTEM DOWN	SYSTEM NAME	SITE	DATE/TIME Partially/Capable	TOTAL Partially Capable TIME (HRS)	DATE/TIME SYSTEM DOWN	DATE RETURNED TO OPERATION	TOTAL DOWN TIME (HRS)	Restore Time	Problem Description & Solution	Notes
EDC0000509	SGI	RACK SERVER BASIC CHASIS	e0drg12	EDC	10/16/02 9:00		10/16/02 9:00	10/16/02 10:00	1.0	1.0	System board crashed due to bad node board.	Downtime was the result of troubleshooting and repair actions. System took an hour to restore but was operational.
LaR0000269	STK	9940A	STK Powderhorn silo2	LaRC	10/15/02 8:00	28.0		10/16/02 12:00			Bad drive. Replace drive.	
EDC0000498	STK	Small Communications Rack	e0hippi1	EDC	09/30/02 5:15	224.7		09/30/02 16:00			Bad HIPPI fiber Channel card going to e0drg12.	No Down time associated because Ops had an alternative path GB router.
EDC0000500	SUN	Enterprise 4000 Enclosure 8-Slot Card Ca	e0sps04	EDC	09/09/02 2:45	8.3		09/09/02 11:00			32MB simm had parity errors causing box to reboot.	There are redundant cpu boards with memory.

Figure 27.4.1-7. RMA Report GUI

27.4.2 ILM-MWO Line Item GUI

The ILM-MWO Line Item form (Figures 27.4.2-1 through 27.4.2-3) provides the ability for the Local Maintenance Coordinator (LMC) to identify equipment that has failed and/or been replaced during system maintenance. In general, a line item should be created for each EIN component that has failed, been replaced, or been added new. **NOTE:** line items can be created even if an EIN record does not exist for the component. Line items may only be created via the ILM-MWO form by pressing the “Add Fail/Replacement Component” button on the bottom of the form. Table 27.4.2-1 describes the fields on the ILM-MWO Line Item form.

The screenshot displays a web-based application window titled "Remedy User - [ILM-MWO Line Item (New)]". The window contains a form for creating a new ILM-MWO Line Item. The form is organized into several sections:

- Work Order Information:** This section is enclosed in a box and contains fields for "Work Order No", "MWO Status", "Location" (a dropdown menu), "Parent EIN", and "ECS Name".
- Component EIN:** A single text input field.
- Database Values:** This section is on the left side of a two-column layout and includes fields for "dbPart No", "dbDescription", "dbMFR", "dbMod-Ver", "dbSerial No", "dbPO Number", "dbVendor ID", "dbItem Status", and "dbGFE Num".
- Observed Values:** This section is on the right side of the two-column layout and includes fields for "Part No" (with a "View Part" button), "Description", "MFR" (a dropdown menu), "Mod-Ver", "Serial No", and "Hw-Sw Code" (a dropdown menu).

The bottom of the window shows a status bar with the text "Ready", "ltran", and "miami".

Figure 27.4.2-1. ILM-MWO Line Item GUI (1 of 3)

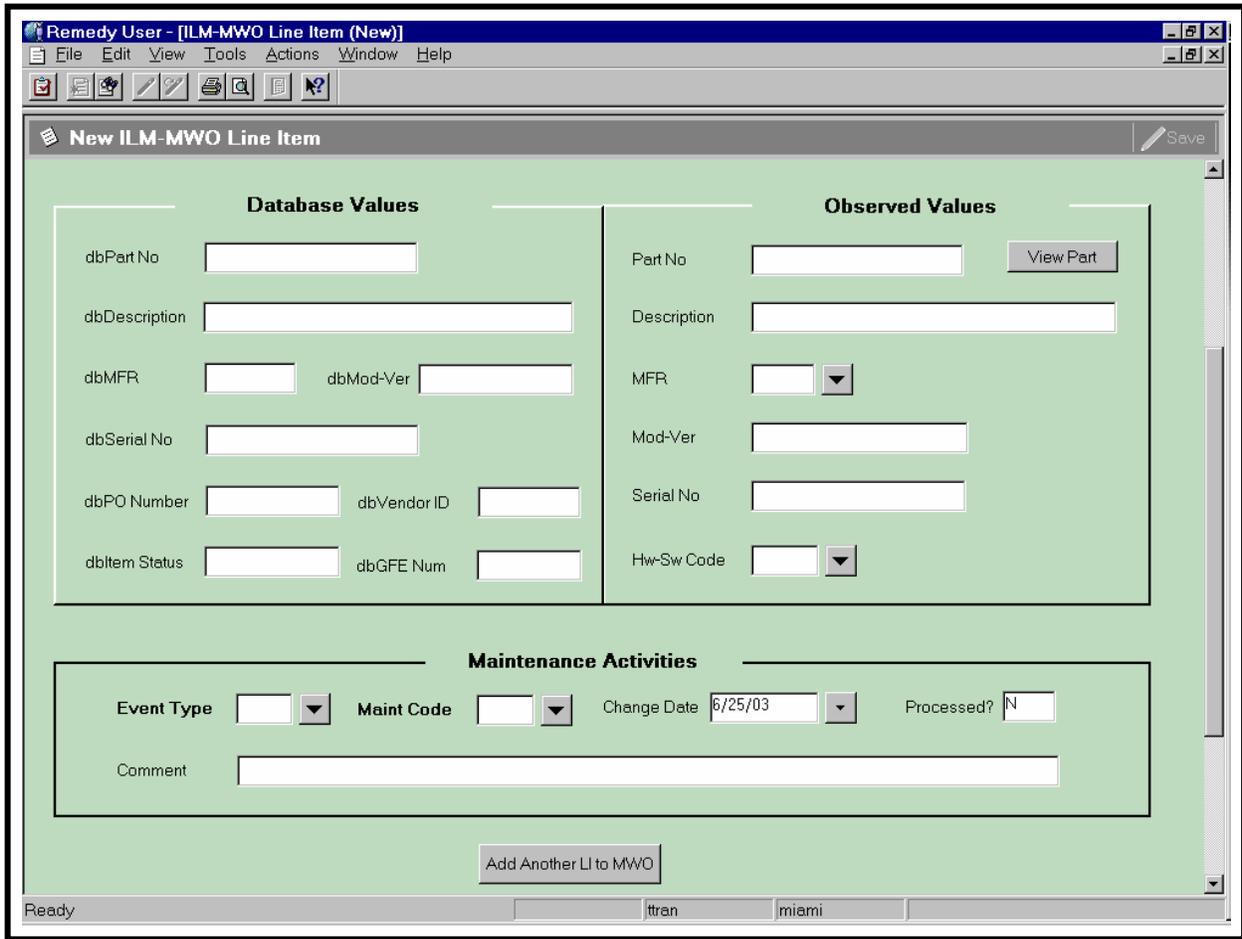


Figure 27.4.2-2. ILM-MWO Line Item GUI (2 of 3)

New ILM-MWO Line Item [Save]

dbSerial No Mod-Ver

dbPO Number dbVendor ID Serial No

dbItem Status dbGFE Num Hw-Sw Code

Maintenance Activities

Event Type Maint Code Change Date Processed?

Comment

New and Relocation Items Only

Replacement's EIN New Parent EIN

New Location New Building New Room

Submitter Create Date Last Modified By

Ready | ttran | miami

Figure 27.4.2-3. ILM-MWO Line Item GUI (3 of 3)

Table 27.4.2-1 describes the fields on the ILM-MWO Line Item form.

Table 27.4.2-1. ILM-MWO Line Item Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
Work Order No	Char	10	System-supplied	Identifier for the work order.
Parent EIN	Char	20	System-supplied	EIN for the parent item in an EIN structure.
MWO Status	Char	1	System-supplied	Code for the status of the work order. O = Open; A = Audit; F=Finish; R = Retired.
ECS Name	Char	30	System-supplied	Name of the machine with which the item is associated.
Location	Char	8	System-supplied	Designator for the location where the item entered as Parent EIN is situated.
Component EIN	Char	20	Optional	Identifier for an item that is a child (component) of a parent EIN and the target of the maintenance event. If the field is left blank, the system will create an inventory number with a C-prefix for it automatically when the line item is processed.
Database Values				If the entered Component EIN exists in the ILM-EIN form, the system will populate this section with the data derived from the ILM-EIN form that describes the component EIN undergoing the maintenance activity.
Observed Values				User may enter information that describes the Component EIN in this section. If the Component EIN does not exist in the database, the component EIN will be added to the database using the information provided in the Observed Values section.
Part No	Char	34	Optional	Manufacturer's or vendor's part number for the item.
Description	Char	60	Optional	Manufacturer's or vendor's description of the item.
MFR	Char	6	Optional	Code used for the manufacturer of the item.
Mod-Ver	Char	24	Optional	Model or Version of the item.
Serial No	Char	30	Optional	Serial number of the item.
Item Status	Char	6	Optional	Code that designates the status of the item.
Hw-Sw Code	Char	2	Optional	Code for classifying items according to source of inventory.
GFE Num	Char	8	Optional	Gov't Furnished Equipment (GFE) number for the item.

Table 27.4.2-1. ILM-MWO Line Item Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
Event Type	Char	1	Required	Code identifying a type of maintenance event (N=new item installed; F=failed item replaced; R=serviceable item replaced).
Maint Code	Char	1	Required	Code designating the item's disposition. Property records are updated differently depending on the value entered. (R = Relocate, S = Stock, V = Vendor).
Change Date	Date		Required	Effective date of the configuration change.
Processed?	Char	1	System-supplied	Flag signifying whether or not the line item has been processed.
Replacement's EIN	Char	20	Optional	Identifier of the new item being used as a replacement. This field is used only for items that have failed and replaced by a new EIN.
New Parent EIN	Char	20	Optional, Required when the Event Type = R and Maint Code = R	EIN of the item to which the Component EIN is to be re-assigned. This field is applicable only to components that have failed or are being replaced (Event Type="F" or "R"), and are being relocated (Maint Code="R"). <i>The value must be supplied or the item will not get processed.</i>
New Location	Char	6	Optional	Code for the new inventory location to which the item is to be assigned.
New Building	Char	6	Optional	Building where the item is to be installed.
New Room	Char	15	Optional	Room where the item is to be installed.
Submitter	Char	30	System-supplied	The user whom created the record.
Create Date	Date		System-supplied	Date the record was created.
Last Modified By	Char	30	System-supplied	The user last modified the record.

Table 27.4.2-2 lists the appropriate combinations of Event Type and Maint Code and the effects on property records when processed.

**Table 27.4.2-2. Effects on Property Records by
MWO Line Item Processing (1 of 4)**

Event Type	Maint Code	Situation/Property Record Updates
<p align="center">F (Failed)</p>	<p align="center">S (Stock)</p>	<ul style="list-style-type: none"> ◆ When an item failed and returned to stock. <p>EIN records:</p> <ul style="list-style-type: none"> • Creates a record if one doesn't exist for the specified component EIN • For the specified component EIN: <ul style="list-style-type: none"> • Clears its Parent EIN • Clears its installation date • Sets Item status to "F" • Sets audit date to the Change Date • Sets ECS name to "IN STOCK" • Sets location, building, and room to new values. <p>OEM part records:</p> <ul style="list-style-type: none"> • Creates an OEM Part record if "observed values" for Part No, MFR, and Description are specified and the part record doesn't already exist <p>EIN structure records:</p> <ul style="list-style-type: none"> • Obsoletes the specified component EIN in EIN Structures where it is active. The structure is rendered inactive as of the specified Change Date <p>Inventory transaction records:</p> <ul style="list-style-type: none"> • Creates an entry for event of type "MFS" for the specified component
<p align="center">F (Failed)</p>	<p align="center">V (Vendor)</p>	<ul style="list-style-type: none"> ◆ When an item failed and returned to the vendor. <p>EIN records:</p> <ul style="list-style-type: none"> • If the Component EIN field is blank, the system will not process the record and sets the Process field to X. • Creates a record if one doesn't exist for the specified component EIN • For the specified component EIN: <ul style="list-style-type: none"> • Clears its Parent EIN • Clears its installation date • Sets item status to "X" • Sets audit date to the Change Date • Sets ECS name to "ARCHIVE" • Sets location to "EDFARC" and clears building and room values. <p>OEM part records:</p> <ul style="list-style-type: none"> • Creates an OEM Part record if "observed values" for Part No, MFR, and Description are specified and the part record doesn't already exist <p>EIN structure records:</p> <ul style="list-style-type: none"> • Obsoletes the specified component EIN in EIN Structures where it is active. The structure is rendered inactive as of the specified Change Date <p>Inventory transaction records:</p> <ul style="list-style-type: none"> • Creates an entry for event of type "MFV" for the specified component

**Table 27.4.2-2. Effects on Property Records by
MWO Line Item Processing (2 of 4)**

Event Type	Maint Code	Property Record Updates
N (New)	S (Stock)	<ul style="list-style-type: none"> ◆ When the replacement item is new and taken from stock. <p>EIN records:</p> <ul style="list-style-type: none"> • Creates a record if one doesn't exist for the specified component EIN • For the specified component EIN: <ul style="list-style-type: none"> • Sets the Parent EIN to the MWO's Parent EIN • Sets installation date to the Change Date • Sets item status to "I" • Sets audit date to the Change Date • Sets ECS name to that of the Parent EIN specified for the MWO itself • Sets location and room values to that of the Parent EIN specified for the MWO <p>OEM part records:</p> <ul style="list-style-type: none"> • Creates an OEM Part record if "observed values" for Part No, MFR, and Description are specified and the part record doesn't already exist <p>EIN structure records:</p> <ul style="list-style-type: none"> • Obsoletes the specified component EIN in EIN Structures where it is active, if any. The structure is rendered inactive as of the specified Change Date • Adds the EIN as a component of the item specified as a component of the MWO's Parent EIN. The structure is rendered active as of the Change Date specified <p>Inventory transaction records:</p> <ul style="list-style-type: none"> • Creates an entry for event of type "MNS" for the specified component

**Table 27.4.2-2. Effects on Property Records by
MWO Line Item Processing (3 of 4)**

Event Type	Maint Code	Property Record Updates
<p align="center">N (New)</p>	<p align="center">V (Vendor)</p>	<ul style="list-style-type: none"> ◆ When the replacement item is new and came from the vendor. <p>EIN records:</p> <ul style="list-style-type: none"> • Creates a record if one doesn't exist for the specified component EIN • For the specified component EIN: <ul style="list-style-type: none"> • Sets the Parent EIN to the MWO's Parent EIN • Sets installation date to the Change Date • Sets receive date to the Change Date • Sets item status to "I" • Sets audit date to the Change Date • Sets ECS name to that of the Parent EIN specified for the MWO itself • Sets location, building, and room values to that of the Parent EIN specified for the MWO itself • If the component is replacing an EIN specified in a separate line item as a failed item being returned to the vendor and , copies the item cost from the EIN record for the failed item to the EIN record for the new item • For a failed item being replaced by the specified component EIN: <ul style="list-style-type: none"> • Sets cost to 0 <p>OEM part records:</p> <ul style="list-style-type: none"> • Creates an OEM Part record if "observed values" for Part No, MFR, and Description are specified and the part record doesn't already exist <p>EIN structure records:</p> <ul style="list-style-type: none"> • Obsoletes the specified component EIN in EIN Structures where it is active, if any. The structure is rendered inactive as of the specified Change Date • Adds the EIN as a component of the item specified as a component of the MWO's Parent EIN. The structure is rendered active as of the Change Date specified <p>Inventory transaction records:</p> <ul style="list-style-type: none"> • Creates an entry for event of type "MNV" for the specified component

**Table 27.4.2-2. Effects on Property Records by
MWO Line Item Processing (4 of 4)**

Event Type	Maint Code	Property Record Updates
R (Replaced)	R (Relocate)	<ul style="list-style-type: none"> ◆ When an item is being relocated to a new machine. <p>EIN records:</p> <ul style="list-style-type: none"> • Creates a record if one doesn't exist for the specified component EIN • For the specified component EIN: <ul style="list-style-type: none"> • Sets the Parent EIN to the New Parent EIN • Sets the Installation Date to Change Date • Sets item status to "I" • Sets audit date to the Change Date • Sets ECS name to the name of the new parent EIN • Sets location, building, and room to that of the new parent EIN <p>OEM part records:</p> <ul style="list-style-type: none"> • Creates an OEM Part record if "observed values" for Part No, MFR, and Description are specified and the part record doesn't already exist <p>EIN structure records:</p> <ul style="list-style-type: none"> • Obsoletes the specified component EIN in EIN Structures where it is active. The structure is rendered inactive as of the specified Change Date • Adds the EIN as a component of the item specified as New Parent EIN. The structure is rendered active as of the specified Change Date <p>Inventory transaction records:</p> <ul style="list-style-type: none"> • Creates an entry for event of type "MRR" for the specified component
R (Replaced)	S (Stock)	<ul style="list-style-type: none"> ◆ When an item is being returned to stock. <p>EIN records:</p> <ul style="list-style-type: none"> • Creates a record if one doesn't exist for the specified component EIN • For the specified component EIN: <ul style="list-style-type: none"> • Sets the Parent EIN to blank • Clears its installation date • Sets item status to "R" • Sets audit date to the Change Date • Sets ECS name to "IN STOCK" • Sets location, building, and room to new values, if specified <p>OEM part records:</p> <ul style="list-style-type: none"> • Creates an OEM Part record if "observed values" for Part No, MFR, and Description are specified and the part record doesn't already exist <p>EIN structure records:</p> <ul style="list-style-type: none"> • Obsoletes the specified component EIN in EIN Structure where it is active. The structure is rendered inactive as of the specified Change Date <p>Inventory transaction records:</p> <ul style="list-style-type: none"> • Creates an entry for event of type "MRS" for the specified component

Table 27.4.2-3. Procedure to Add Work Order Line Items (1 of 4)

Perform	Action	Expected Result
<p>Navigate to the ILM-MWO Line Item Form</p>	<p>At the Remedy-ILM PC,</p> <ul style="list-style-type: none"> ◆ File -> Open -> ILM-MWO -> Search ◆ Find the Work order No to add the line items ◆ When the Work order is displayed, click on the “Add Fail-Replacement Component” button on the bottom of the ILM-MWO form <p>Warning: User Must use the ILM-MWO form to create new work order line items. The reason being is that the system needs to know the work order where the line item was generate from.</p>	<p>ILM-MWO Line Item form is displayed and ready for the user to add new work order line items.</p>
<p>Entering a failed item and returned to vendor</p>	<p>At the ILM-MWO Line Item form,</p> <ul style="list-style-type: none"> ◆ Component EIN – Enter a component EIN if known – the system populates the “Database Values” section if the Component EIN existed in the ILM-EIN form. ◆ If the Component EIN does not exist in the database, complete the “Observed Values” section. ◆ Event Type – Enter an “F” for failed. ◆ Maint Code – Enter a “V” to specify that the failed component was returned to the vendor. ◆ Enter a Replacement EIN into the Replacement EIN field if known. ◆ Press the “Add Another LI to MWO” button. 	<ul style="list-style-type: none"> ◆ The system added the Failed component to the ILM-MWO Line Item form and is ready for user to add another line item to the work order. ◆ Refer to table 27.4.2-2 Event Type (F) and Maint Code (V) for detail description of property updates after the Property Administrator processes this line item.

NOTE: To move to the next field, use either the TAB key or the Mouse. The Enter key will not move the cursor to the next field.

Table 27.4.2-3. Procedure to Add Work Order Line Items (2 of 4)

Perform	Action	Expected Result
Entering a failed item and return to stock	<p>At the ILM-MWO Line Item form,</p> <ul style="list-style-type: none"> ◆ Component EIN – Enter a component EIN if known – the system populates the “Database Values” section if the Component EIN existed in the ILM-EIN form. ◆ If the Component EIN does not exist in the database, complete the “Observed Values” section. ◆ Event Type – Enter an “F” for failed. ◆ Maint Code – Enter an “S” to specify that the failed component was returned to stock. ◆ Enter the new stock location values in the New Location, New Building, and New Room fields. ◆ Press the “Add Another LI to MWO” button. 	<ul style="list-style-type: none"> ◆ The system added the Failed component to the ILM-MWO Line Item form and is ready for user to add another line item to the work order. ◆ Refer to table 27.4.2-2 Event Type (F) and Maint Code (S) for detail description of property updates after the Property Administrator processes this line item.
adding a component EIN to the MWO’s Parent EIN structure where the Component EIN came from stock	<p>At the ILM-MWO Line Item form,</p> <ul style="list-style-type: none"> ◆ Component EIN – Enter a component EIN if known – the system populates the “Database Values” section if the Component EIN existed in the ILM-EIN form. ◆ If the Component EIN does not exist in the database, complete the “Observed Values” section. ◆ Event Type – Enter an “N” for failed. ◆ Maint Code – Enter an “S” to specify that the failed component came from stock. ◆ Press the “Add Another LI to MWO” button. 	<ul style="list-style-type: none"> ◆ The system added the Failed component to the ILM-MWO Line Item form and is ready for user to add another line item to the work order. ◆ Refer to table 27.4.2-2 Event Type (N) and Maint Code (S) for detail description of property updates after the Property Administrator processes this line item.

NOTE: To move to the next field, use either the TAB key or the Mouse. The Enter key will not move the cursor to the next field.

Table 27.4.2-3. Procedure to Add Work Order Line Items (3 of 4)

Perform	Action	Expected Result
<p>adding a new component EIN to the MWO's Parent EIN Structure where the Component EIN came from the vendor.</p>	<p>At the ILM-MWO Line Item form,</p> <ul style="list-style-type: none"> ◆ Component EIN – Enter a component EIN if known – the system populates the “Database Values” section if the Component EIN existed in the ILM-EIN form. ◆ If the Component EIN does not exist in the database, complete the “Observed Values” section. ◆ Event Type – Enter an “N” for failed. ◆ Maint Code – Enter a “V” to specify that the failed component was returned to the vendor. ◆ Press the “Add Another LI to MWO” button. 	<ul style="list-style-type: none"> ◆ The system added the Failed component to the ILM-MWO Line Item form and is ready for user to add another line item to the work order. ◆ Refer to table 27.4.2-2 Event Type (N) and Maint Code (V) for detail description of property updates after the Property Administrator processes this line item.
<p>Relocating a component to a new Parent EIN structure</p>	<p>At the ILM-MWO Line Item form,</p> <ul style="list-style-type: none"> ◆ Component EIN – Enter a component EIN if known – the system populates the “Database Values” section if the Component EIN existed in the ILM-EIN form. ◆ If the Component EIN does not exist in the database, complete the “Observed Values” section. ◆ Event Type – Enter an “R” for relocate. ◆ Maint Code – Enter an “R” to specify that the component EIN is being relocated to a new Parent EIN. ◆ Enter the new Parent EIN into the New Parent EIN field. ◆ Press the “Add Another LI to MWO” button. 	<ul style="list-style-type: none"> ◆ The system added the Failed component to the ILM-MWO Line Item form and is ready for user to add another line item to the work order. ◆ Refer to table 27.4.2-2 Event Type (R) and Maint Code (R) for detail description of property updates after the Property Administrator processes this line item.

NOTE: To move to the next field, use either the TAB key or the Mouse. The Enter key will not move the cursor to the next field.

Table 27.4.2-3. Procedure to Add Work Order Line Items (4 of 4)

Perform	Action	Expected Result
Relocating a component to stock	<p>At the ILM-MWO Line Item form,</p> <ul style="list-style-type: none"> ◆ Component EIN – Enter a component EIN if known – the system populates the “Database Values” section if the Component EIN existed in the ILM-EIN form. ◆ If the Component EIN does not exist in the database, complete the “Observed Values” section. ◆ Event Type – Enter an “R” for relocate. ◆ Maint Code – Enter an “S” to specify that the component EIN is being returned to stock. ◆ Enter the new stock location values in the New Location, New Building, and New Room fields. ◆ Press the “Add Another LI to MWO” button. 	<ul style="list-style-type: none"> ◆ The system added the Failed component to the ILM-MWO Line Item form and is ready for user to add another line item to the work order. ◆ Refer to table 27.4.2-2 Event Type (R) and Maint Code (S) for detail description of property updates after the Property Administrator processes this line item.

NOTE: To move to the next field, use either the TAB key or the Mouse. The Enter key will not move the cursor to the next field.

27.5 License Management

Many software products used in EMD are licensed; that is, subject to conditions limiting how many users can run the product and where. Licenses take numerous forms. Nodelock licenses let users run the product, but only on a designated machine; counted nodelock licenses limit the number of users that can run the product on that machine. Floating licenses allow users to run a product from any machine in a network. They may limit the number of users that can run the product concurrently, the number of servers that can be used concurrently, the number of sites that can use the product, or any combination of the above. Licenses can apply to a named product, one or more of its features, one or more of its versions, and/or one or more types of platforms. Some vendors enforce these provisions through use of license keys, but EMD is accountable for adhering to licensing provisions whether vendors use keys or not.

When purchasing a product or obtaining an upgrade, engineering determines what licensing provisions are required. Depending on the product, license entitlements may appear as separate line items on purchase orders, or frequently not. (For example, purchased licensing provisions may be provided with the product; that is, not purchased separately.) License certificates (rights to certify) typically accompany software when it arrives and, in the case of operating system software, accompanies the computers themselves. These certificates describe the licensing provisions that were purchased and may carry an associated cost. Sometimes, the certificates include a license key, but usually they represent the right to obtain keys.

Multiple licenses are sometimes obtained from the product vendor under the provisions of a single license certificate. Each license would account for part of the rights-to-use under the

certificate. Conversely, individual licenses can consume rights-to-use from more than one certificate. Each unique license key implies a unique license, but not every license has a key.

Licenses are allocated to the sites and host machines where their keys are installed, and keyless licenses are allocated to where their software products are installed. This is not so much for property accounting (i.e., cost accounting), but to verify adherence to purchased licensing provisions and to identify where licenses are used in case rights-to-use must transfer elsewhere.

License rights-to-use are counted differently depending on the type of licenses purchased. Rights for nodelock license are allocated and counted by node and are consumed at the rate of one license per node. Floating license rights are allocated and counted based on number of users on a network rather than by specific machines, where the network is represented by a machine on which the license is installed. Floating license rights are consumed at the rate of number of users per license. Occasionally, a purchased entitlement covers a total number of users across a limited number of machines. In this case, rights are consumed at the rate of one license per node as well as number of users per license.

The following forms provide the software license administrator (SLA) capabilities to manage software licenses.

- ILM-License Products – to maintain standardized information about manufacturer’s part numbers.
- ILM-License Entitlement – to maintain records of purchased rights-to-use for licensed software.
- ILM-License – to maintain records of software licenses obtained from vendors and maintains license allocation.
- ILM-License Mapping – manages the mapping of a license to purchased entitlements.
- ILM-Additional Host – identifies redundant or backup server machines on which the license will be installed

27.5.1 ILM-License Products GUI

This form (Figure 27.5.1-1) provides the SLA the ability to maintain standardized information about manufacturers’ part numbers. Entitlement Part number must be recorded before they can be added to an entitlement or license via the ILM-Entitlement form or the ILM-License form.

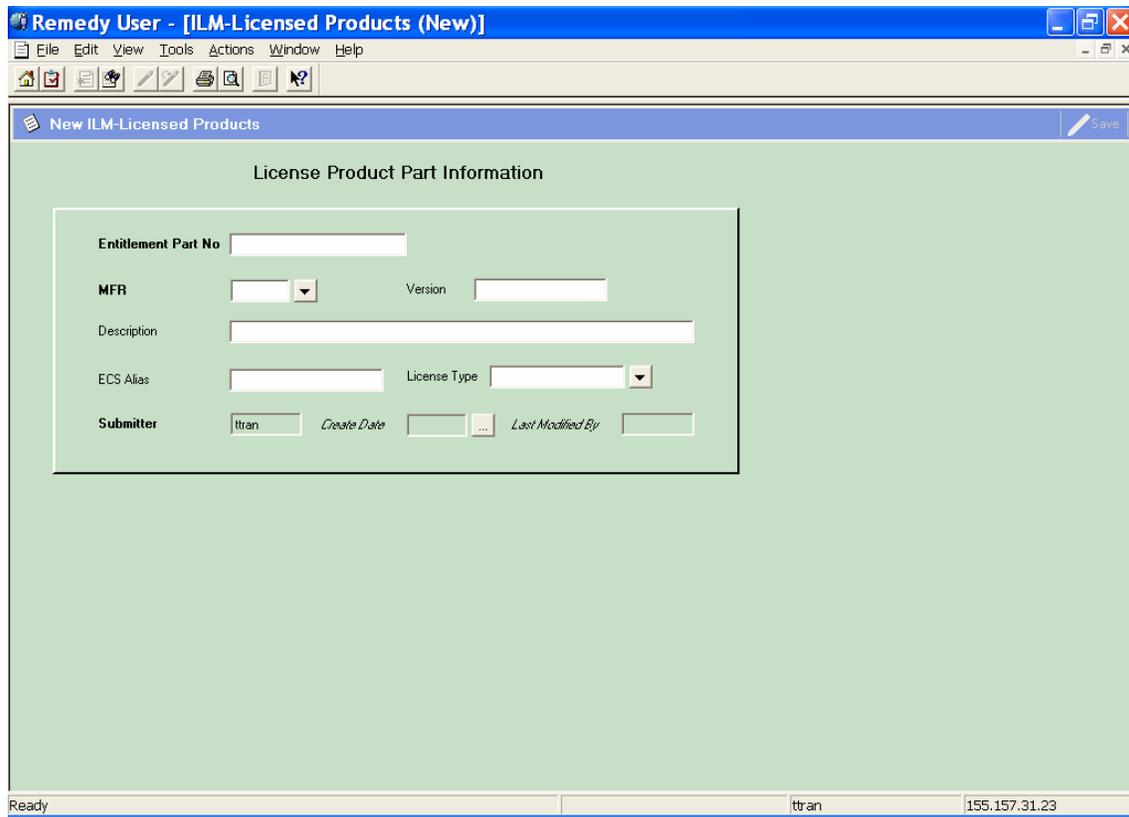


Figure 27.5.1-1. ILM-License Products GUI

Table 27.5.1-1 describes the ILM-License Products form field definition.

Table 27.5.1-1. ILM-License Products Field Descriptions

Field Name	Data Type	Size	Entry	Description
Entitlement Part No	Char	34	Required	Manufacturer's or vendor's part number for the entitlement.
MFR	Char	6	Required	Code for the manufacturer from whom the item was purchased.
Version	Char	34	Optional	Version number of the part.
Description	Char	50	Required	Manufacturer's or vendor's description for the entitlement.
ECS Alias	Char	30	Optional	Common name used for the licensed product and all its versions and variants.
License Type	Char	16	Optional	Classification that distinguishes among licenses according to rules of use. Examples include: floating (limited number of concurrent users), nodelocked (limited to use on a single machine), project (unlimited use anywhere by individuals working on a certain project), site (unlimited use at a single site), etc.
Submitter	Char	30	System-supplied	The user that created the record.
Create Date	Date		System-supplied	Date the record was created.
Last Modified By	Char	30	System-supplied	The user who last modified the record.

27.5.2 ILM-License Entitlement GUI

Operators use the ILM-License Entitlement form (Figure 27.5.2-1, 2, & 3) to maintain records of purchased rights-to-use for licensed software, including how many node and user rights-to-use have been consumed, remain, and are under maintenance. Rights consumed and remaining are computed automatically based on the licenses mapped against it. Table 27.5.2-1 provides ILM-License Entitlement field descriptions.

The screenshot shows a web-based form titled "New ILM-License Entitlement" within a browser window. The form is organized into several sections:

- Entitlement ID:** A single text input field.
- Part Information:** A bordered box containing:
 - Entitlement Part No:** Text input field with an "Add New Part" button to its right.
 - MFR:** A dropdown menu.
 - Description:** A long text input field.
 - ECS Alias:** Text input field.
 - License Type:** A dropdown menu.
 - Version:** Text input field.
- Node Rights-To-Use (RTU):** A bordered box with four input fields, each containing the number "0":
 - Node Total
 - Node Allocated
 - Node Remaining
 - Node Under Maint
- User Rights-To-Use (RTU):** A bordered box with four input fields, each containing the number "0":
 - User Total
 - User Allocated
 - User Remaining
 - User Under Maint

The status bar at the bottom of the window displays "Ready", "ttran", and "miami".

Figure 27.5.2-1. ILM-License Entitlement GUI (1 of 3)

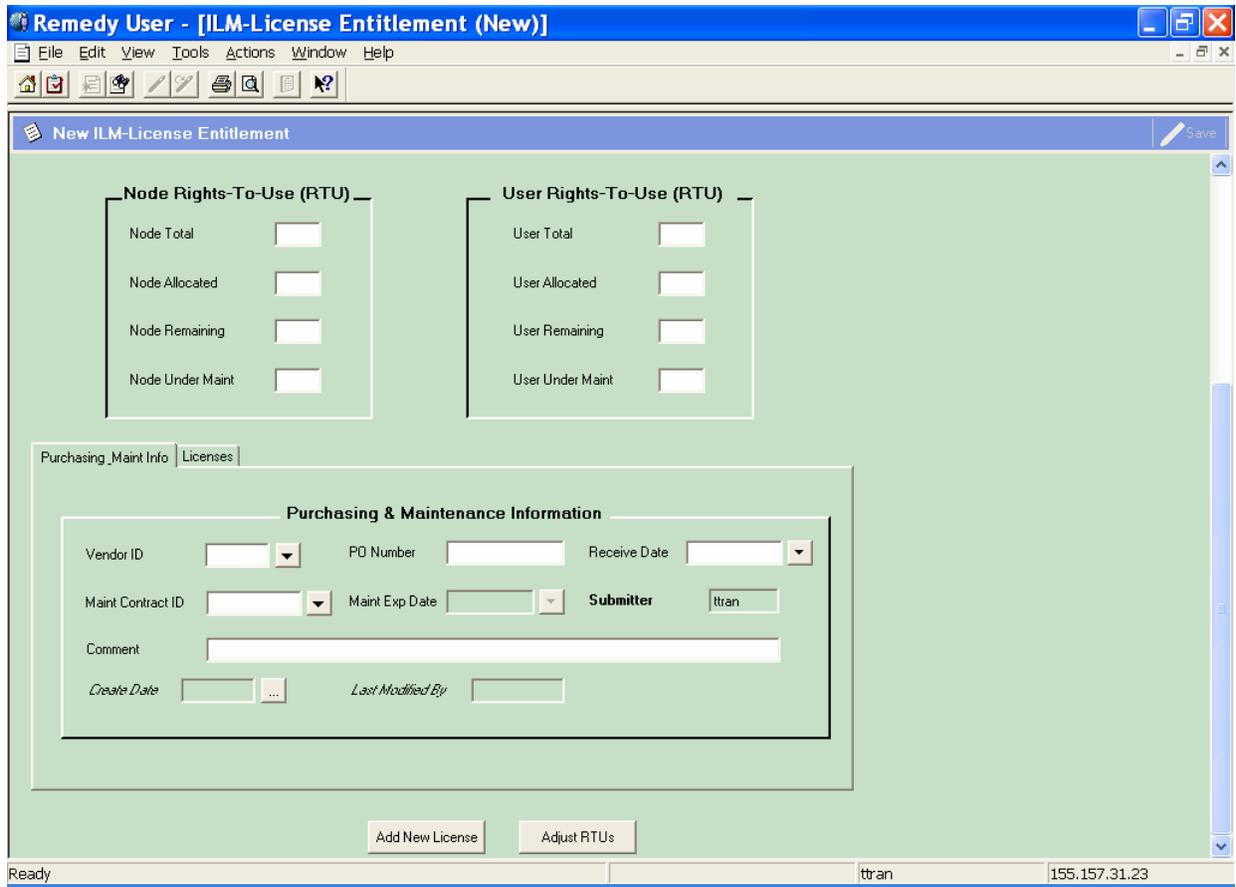


Figure 27.5.2-2. ILM-License Entitlement GUI (2 of 3)

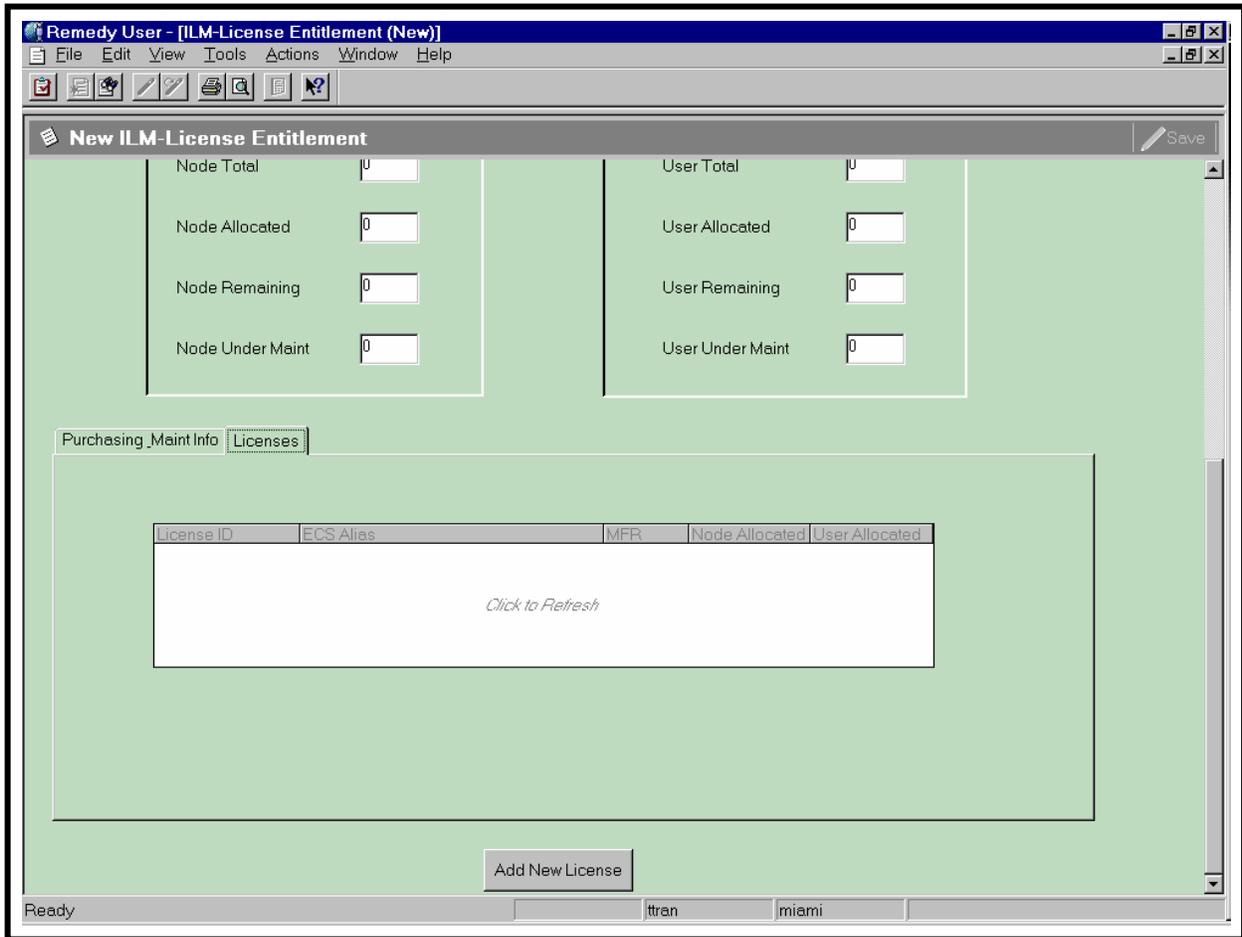


Figure 27.5.2-3. ILM-License Entitlement GUI (3 of 3)

Table 27.5.2-1. ILM-Entitlement Field Descriptions

Field Name	Data Type	Size	Entry	Description
Entitlement ID	Char	10	System supplies	Identifier for a purchased license entitlement.
Entitlement Part No	Char	34	Required	Manufacturer's or vendor's part number for the entitlement.
MFR	Char	6	System supplied	Code for the manufacturer from whom the item was purchased. in the field above.
Description	Char	50	System supplied	Manufacturer's or vendor's description for the entitlement.
ECS Alias	Char	30	System supplied	Common name used for the licensed product and all its versions and variants.
License Type	Char	16	System supplied	Classification that distinguishes among licenses according to rules of use.
Version	Char	34	System supplied	Version number of the part.
Rights to Use (RTU)	Integer	8	Optional	Quantity of node or user rights-to-use authorized by this purchased entitlement.
Node/User Allocated	Integer	8	System supplied	Quantity of node or user rights under the license entitlement currently allocated by licenses mapped to the entitlement. This value is calculated by the system and reflects the total number of allocations of those licenses.
Node/User Remaining	Integer	8	System supplied	Quantity of node or user rights under a license entitlement not yet consumed by the mapping of licenses to the entitlement.
Node/User Under Maint	Integer	8	System supplied	Quantity of node or user rights-to-use currently under maintenance.
Vendor ID	Char	6	Optional	Code for the vendor from whom the item was purchased.
Receive Date	Date		Optional	Date item was received from vendor.
Maint Contract ID	Char	10	Optional	Identifier for the Maintenance Contract under which the item is covered.
Maint Exp Date	Date		Optional	Date the maintenance contract expired.
Comment	Char	30	Optional	Miscellaneous information specific to the item.
Licenses	Page			This table lists any license(s) the license entitlement is mapped to and how many user rights-to-use were assigned to the license id.
Submitter	Char	30	System-supplied	The user whom created the record.
Create Date	Date		System-supplied	Date the record was created.
Last Modified By	Char	30	System-supplied	The user who last modified the record.

The following buttons are unique to this form:

- Add New Part – Activates the ILM-License Products form. This allows the operator to add new parts.
- Add New License – displays the ILM-License form (Figure 27.5.3) to allow the SLA to add new licenses.
- Adjust RTUs – Facilitates adjustments of the right-to-use numbers.

Table 27.5.2-2 provides instruction on how to add a new License Entitlement.

Table 27.5.2-2. Procedure to Add New License Entitlement

Perform	Action	Expected Result
Navigate to the ILM-License Entitlement Form	At the Remedy-ILM PC, <ul style="list-style-type: none"> ◆ File -> Open -> ILM-License Entitlement -> New 	ILM-License Entitlement form is displayed and ready for the user to add new license entitlement.
Defining a new license entitlement	Filling in the necessary information, <ul style="list-style-type: none"> ◆ Entitlement ID – Leave this field blank. The system will generate the next prefixed “LE” number when user saves the record. ◆ Complete the Part information section. Note. The Entitlement Part No field’s label is Bolded. Therefore, you must enter a value into the Entitlement Part No field. The Entitlement Part No must exist in the ILM-License Products form. If not, the system will display an error message and will not except the value. ◆ If the license entitlement is a Node lock license, complete the Node Rights-To-Use section. ◆ If the license entitlement is a floating license, complete the User Rights-To-Use section. ◆ Complete the Purchasing & Maintenance Info section. ◆ Press the Save icon to save the record. 	<ul style="list-style-type: none"> ◆ The system will generate the next prefixed “LE” license entitlement number and saves the new record in the database.

NOTE: To move to the next field, use either the TAB key or the Mouse. The Enter key will not move the cursor to the next field.

Table 27.5.2-3 provides instruction on how to run the License Entitlement status report that was specifically designed for this form. This report lists the status of current license entitlements for licensed software products, sorted by software product, version, and license type.

Table 27.5.2-2. Procedures to Generate ILM-License Entitlement Predefined Reports

Perform	Action	Expected Result
Navigate to the ILM-License Entitlement Form	At the Remedy-ILM PC, ♦ File -> Open -> ILM-License Entitlement -> Search	♦ ILM-License Entitlement form is displayed.
Run License Entitlement Status Report	♦ Find the records of interest ♦ When the records are displayed, Tools -> Reporting -> License Ent Status Report ♦ When the report is displayed, user has the option to either print the report by pressing the print icon or export the report into a file by pressing the Export Icon next to the print icon. ♦ Close the report preview.	♦ The License Entitlement Status Report is displayed. See Figure 27.5.2-4 for the report layout.

NOTE: To move to the next field, use either the TAB key or the Mouse. The Enter key will not move the cursor to the next field.

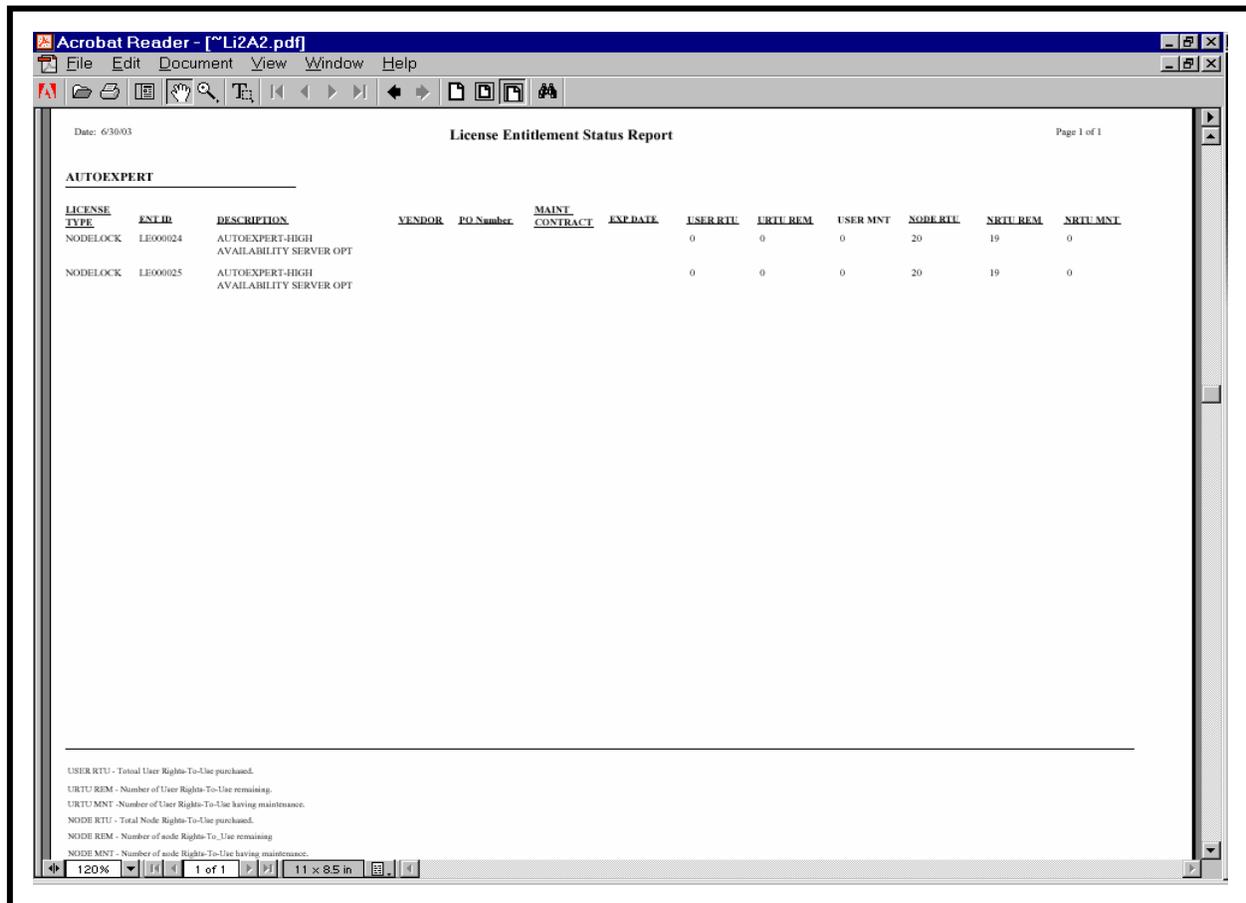


Figure 27.5.2-4. License Entitlement Status Report GUI

27.5.3 ILM-License GUI

The ILM-License form (Figures 27.5.3-1 to 27.5.3-4) maintains records of software licenses obtained from vendors. This form also maintains records about the hosts and sites to which the licenses have been allocated. Licenses must be mapped to purchased license entitlements so that consumption of license rights can be tracked.

A license is a euphemism for the rights granted a number of users to operate a software product or one or more of the product’s versions or features concurrently on certain machines. These rights are often encoded in a license “key”, but not all products employ such keys.

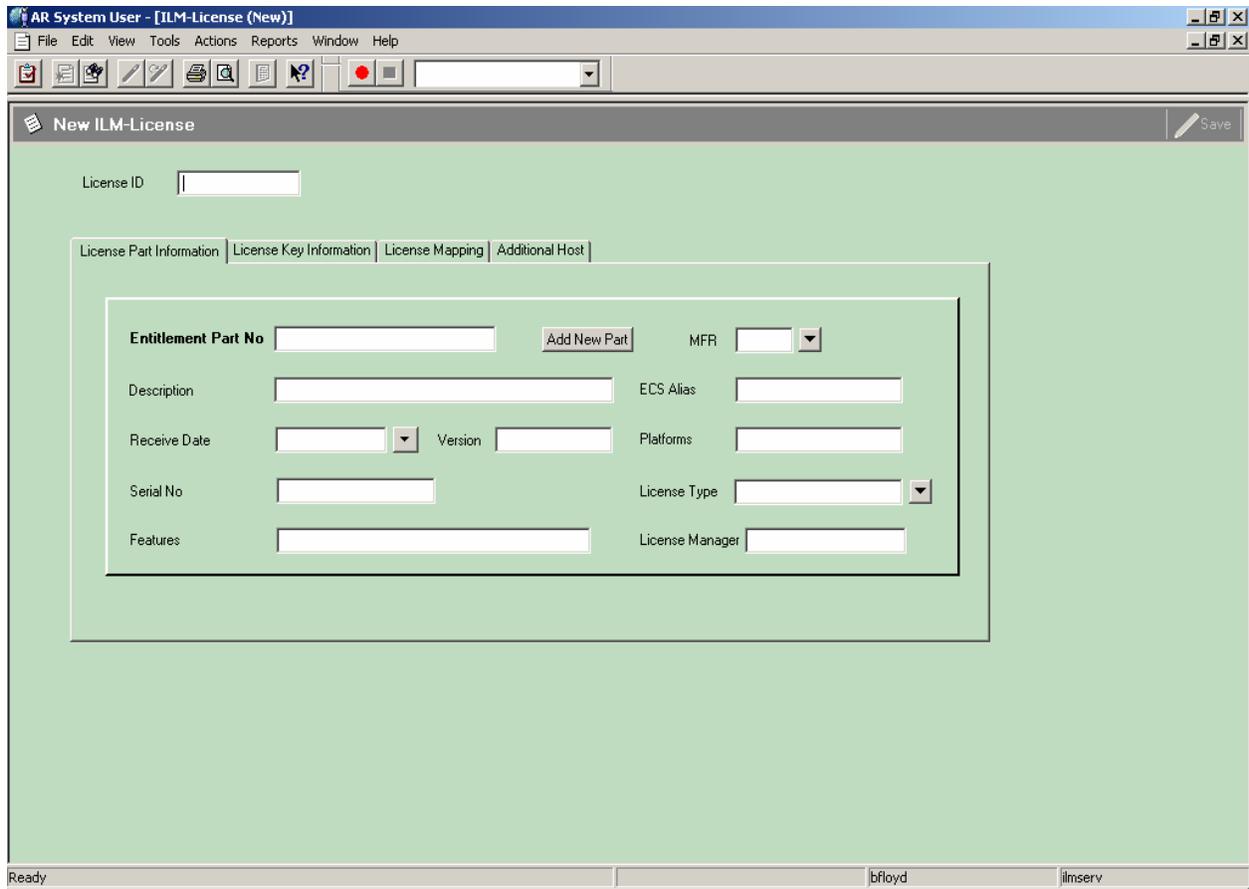


Figure 27.5.3-1. ILM-License GUI (1 of 4)

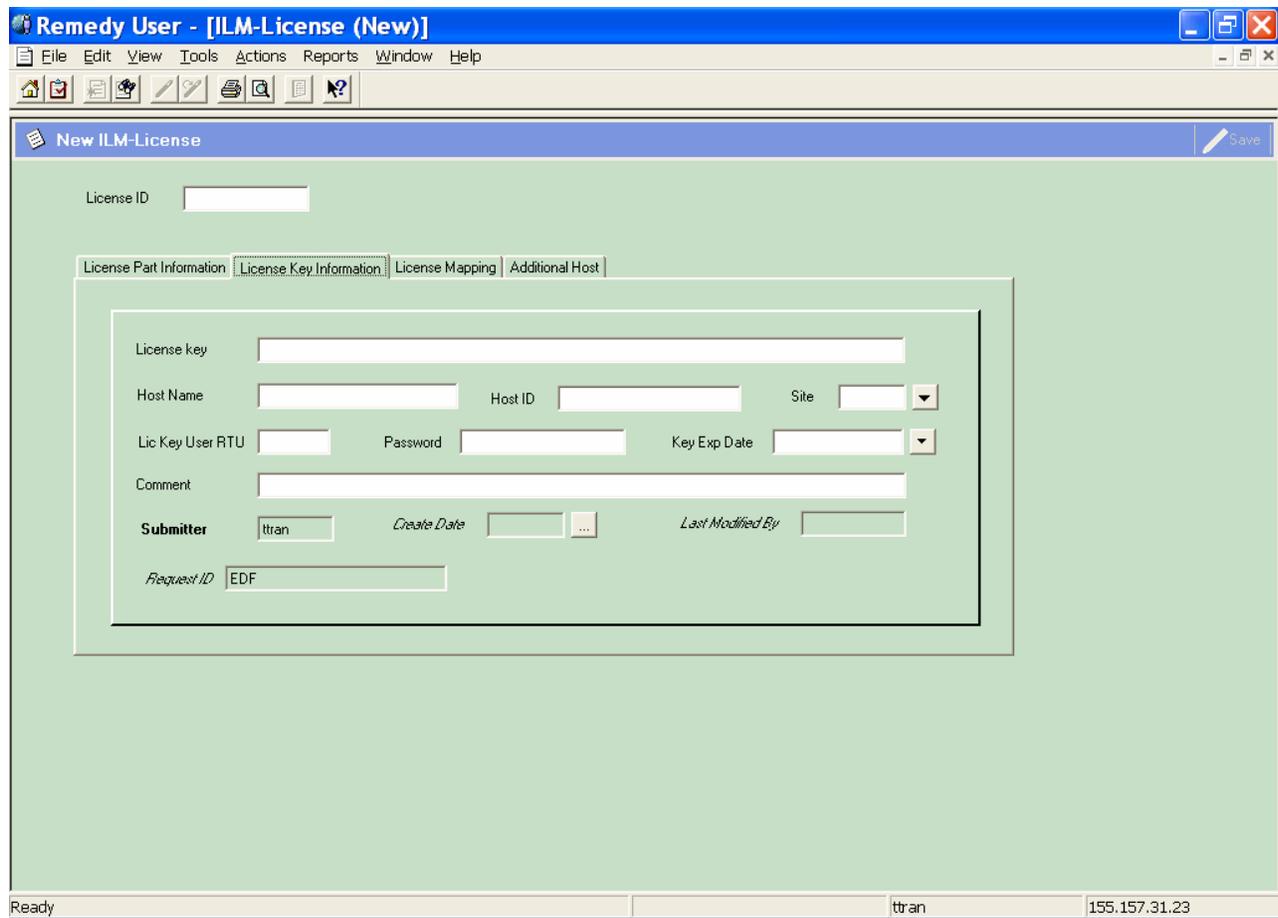


Figure 27.5.3-2. ILM-License GUI (2 of 4)

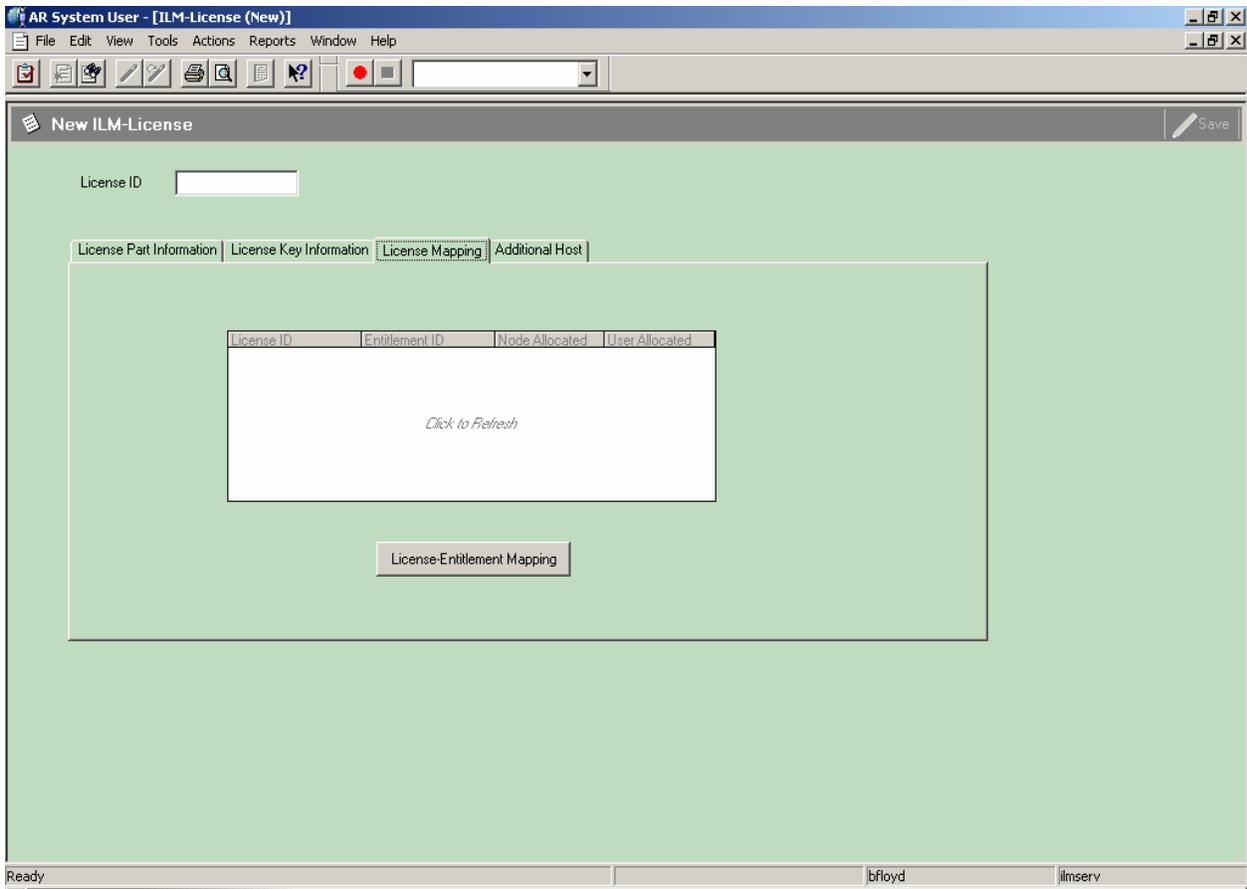


Figure 27.5.3-3. ILM-License GUI (3 of 4)

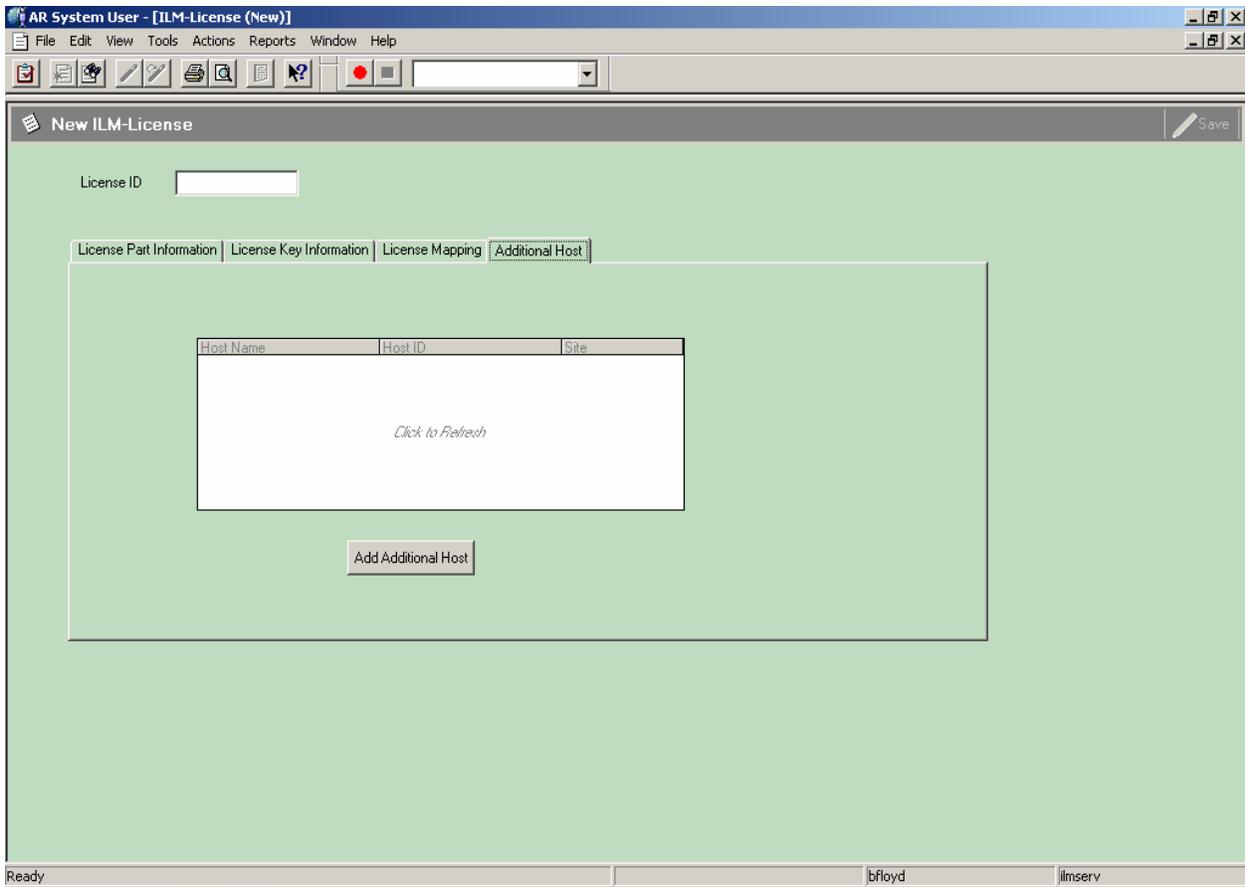


Figure 27.5.3-4. ILM-License GUI (4 of 4)

Table 27.5.3-1 describes the field definition for the ILM-License form, and table 27.5.3-2 and 27.5.3-3 provide instructions on how to create a new license and how to map a license to entitlement.

Table 27.5.3-1. ILM-License Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
License ID	Char	10	System Supplies	Unique designator for a license.
Entitlement Part No	Char	34	Required	Manufacturer's or vendor's part number for the entitlement.
MFR	Char	6	System supplied	Code for the manufacturer from whom the item was purchased.
Description	Char	50	System supplied	Manufacturer's or vendor's description for the entitlement.
ECS Alias	Char	30	System supplied	Common name used for the licensed product and all its versions and variants.
Receive Date	Date		Optional	Date the license key and/or data arrived.
Version	Char	34	System supplied	Version number of the part.
Platforms	Char	15	Optional	One or more codes for the types of machines to which the license applies (e.g., Sun, SGI, PC, etc.)
Serial No	Char	30	Optional	Vendor-supplied serial number for the license or the product being licensed.
License Type	Char	16	System supplied	Classification that distinguishes among licenses according to rules of use.
Features	Char	54	Optional	Name(s) of one or more features of the licensed product that are covered by the license.
License Manager	Char	12	Optional	Technology employed in managing the license on-line (e.g., flexlm, proprietary, etc.)
License Key	Char	50	Optional	Char of alphanumeric characters that represent the provisions for a license in an encoded form.
Host Name	Char	30	Optional	ECS Name of a machine to which the license is allocated.
Host ID	Char	20	Optional	Host id of the license server machine supplied to the vendor when requesting the license. Allocations of licenses to machines are accomplished via the License Allocation Manager screen.
Site	Char	6	Optional	Code for the site to which the license is allocated.
Lic Key User RTU	Integer	8	Optional	Number of users authorized by the license to run the licensed product concurrently on a single network. This value limits the user rights-to-use that can be recorded in the license's allocation records.
Password	Char	20	Optional	Password supplied along with the license key by the vendor.
Key Exp Date	Date		Optional	Date on which the license key is no longer usable.
Comment	Char	60	Optional	Comment to be stored in the record.

Table 27.5.3-1. ILM-License Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
Submitter	Char	30	System-supplied	The user whom created the record.
Create Date	Date		System-supplied	Date the record was created.
Last Modified By	Char	30	System-supplied	The user last modified the record.

The following buttons are unique to this form:

- Add New Part – Activates the ILM-License Products form. This allows the operator to add new parts.
- License-Entitlement Mapping - activates the ILM-License Mapping form that allows the SLA to map the license to the purchased entitlement.
- Add Additional Host – activates the ILM-Additional host form to allow the SLA to add redundant host or backup server to the license.

**Table 27.5.3-2. Procedure to Add New License and Allocate It to a Machine
(1 of 2)**

Perform	Action	Expected Result
Navigate to the ILM-License Form	At the Remedy-ILM PC, ♦ File -> Open -> ILM-License -> New Or ♦ While the ILM-License Entitlement form is displayed, press the “Add New License” button on the bottom of the form.	ILM-License form is displayed and ready for the user to add new license.
Defining a new license and allocate the license to a host	Filling in the necessary information, ♦ License ID – Leave this field blank. The system will generate the next prefixed “L” number when user saves the record. ♦ Complete the Part information section. Note. The Entitlement Part No field’s label is Bolded . Therefore, you must enter a value into the Entitlement Part No field. The Entitlement Part No must exist in the ILM-License Products form. If not, the system will display an error message and will not except the value. ♦ License Key – Enter the license key that the vendor provided. ♦ Enter Host name, Host ID, and Site where the license is allocated. ♦ Complete the rest of the information in the License Key section. ♦ Press the Save icon to save the record.	♦ The system will generate the next prefixed “L” license entitlement number and saves the new record in the database. ♦ The system displays the ILM-License Mapping form (Figure 27.5.4-1) with the newly created license information that just created and ready for user to map the license to the purchased entitlement.

NOTE: To move to the next field, use either the TAB key or the Mouse. The Enter key will not move the cursor to the next field.

**Table 27.5.3-2. Procedure to Add New License and Allocate It to a Machine
(2 of 2)**

Perform	Action	Expected Result
Mapping the new license to a purchased entitlement	<p>When the Save button is pressed, the system displays the ILM-License Mapping form with the data about the newly created license record created in the step above. Enter the following information to complete mapping the license to a purchase entitlement:</p> <ul style="list-style-type: none"> ◆ Entitlement ID – Enter an Entitlement ID against which this license ID should be mapped. ◆ If the license type is a Node lock license, enter “1” to allocate 1 node lock license to this license ID. ◆ If the license type is a floating license, enter the number of user rights-to-use allocated to this license ID. The number of User rights-to-use cannot exceed the number user rights-to-use assigned to the license ID. ◆ Press the Save icon to save the record. ◆ Close the ILM-License Mapping form. 	<ul style="list-style-type: none"> ◆ If the license type is a Node Lock license, the system will decrement 1 node rights-to-use remaining from the Entitlement ID and increments 1 from the Node rights-to-use allocated. ◆ If the license type is a floating license, the system will decrement 1 from the user rights-to-use remaining from the Entitlement ID and increments 1 from the user rights-to-use allocated.
Adding additional host to the license	<p>while the ILM-License form is on the displayed,</p> <ul style="list-style-type: none"> ◆ Find the license of interest ◆ Press the “Add Additional Host” button on the bottom of the form to add additional host to the license ID. ◆ Enter the additional Host Name, Host ID, and Site. ◆ Press the Save icon to finish adding additional host to the license, OR ◆ Press the “Add Additional Host to License” button to add additional hosts to the license ID. ◆ Close the ILM-Additional Host form when finished adding all the additional hosts. 	<ul style="list-style-type: none"> ◆ The ILM-Additional Host form is displayed. See section 27.5.5 for more information about the ILM-Additional Host form. ◆ Additional hosts are added to the license.

NOTE: To move to the next field, use either the TAB key or the Mouse. The Enter key will not move the cursor to the next field.

Moreover, there are two pre-defined reports that were designed specially for this form. The license allocation by host report lists license allocations, sorted by host name and part alias and the license allocation by product report lists license allocations for licensed software products, sorted by product, version, and host name. Table 27.5.3-4 provides instructions on how to run these reports. Refer to Figure 27.5.3-4 and 27.5.3-5 for the report layouts.

Table 27.5.3-3. Procedures to Generate ILM-License Predefined Reports

Perform	Action	Expected Result
Navigate to the ILM-License Form	At the Remedy-ILM PC, ♦ File -> Open -> ILM-License -> Search	♦ ILM-License Entitlement form is displayed.
Run License Allocation by Host Report	Tools -> Reports -> License Allocation By Host ♦ When the ILM-DIA-Lic Report form is displayed (see Figure 27.5.3-3), select or enter a site name, and/or enter the ECS Alias. Leaving the Site and the ECS Alias values blank will select all licenses in the database. ♦ Press the “Run Report” button to start running the report. ♦ Press on the “Report Preview” to bring up the report layout. ♦ When the report is displayed, user has the option to either print the report by pressing the print icon or export the report into a file by pressing the Export Icon next to the print icon. ♦ Close the report preview.	♦ The License Allocation by Host Report is displayed. See Figure 27.5.3-4 for the report layout.
Run License Allocation by product Report	Tools -> Reports -> License Allocation By Product ♦ When the ILM-DIA-Lic Report form is displayed (see Figure 27.5.3-3), enter the ECS Alias. Leaving the Site ECS Alias values blank will select all licenses in the database. ♦ Press the “Run Report” to start running the report. ♦ Press on the “Report Preview” to bring up the report layout. ♦ When the report is displayed, user has the option to either print the report by pressing the print icon or export the report into a file by pressing the Export Icon next to the print icon. ♦ Close the report preview.	♦ The License Allocation by Product Report is displayed. See Figure 27.5.3-5 for the report layout.

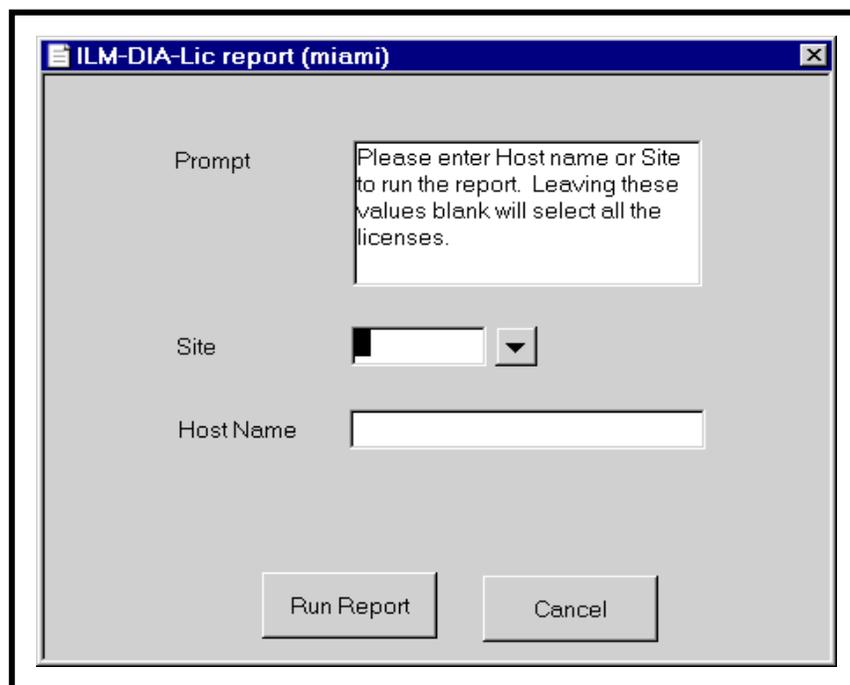


Figure 27.5.3-3. ILM-DIA-Lic Report GUI

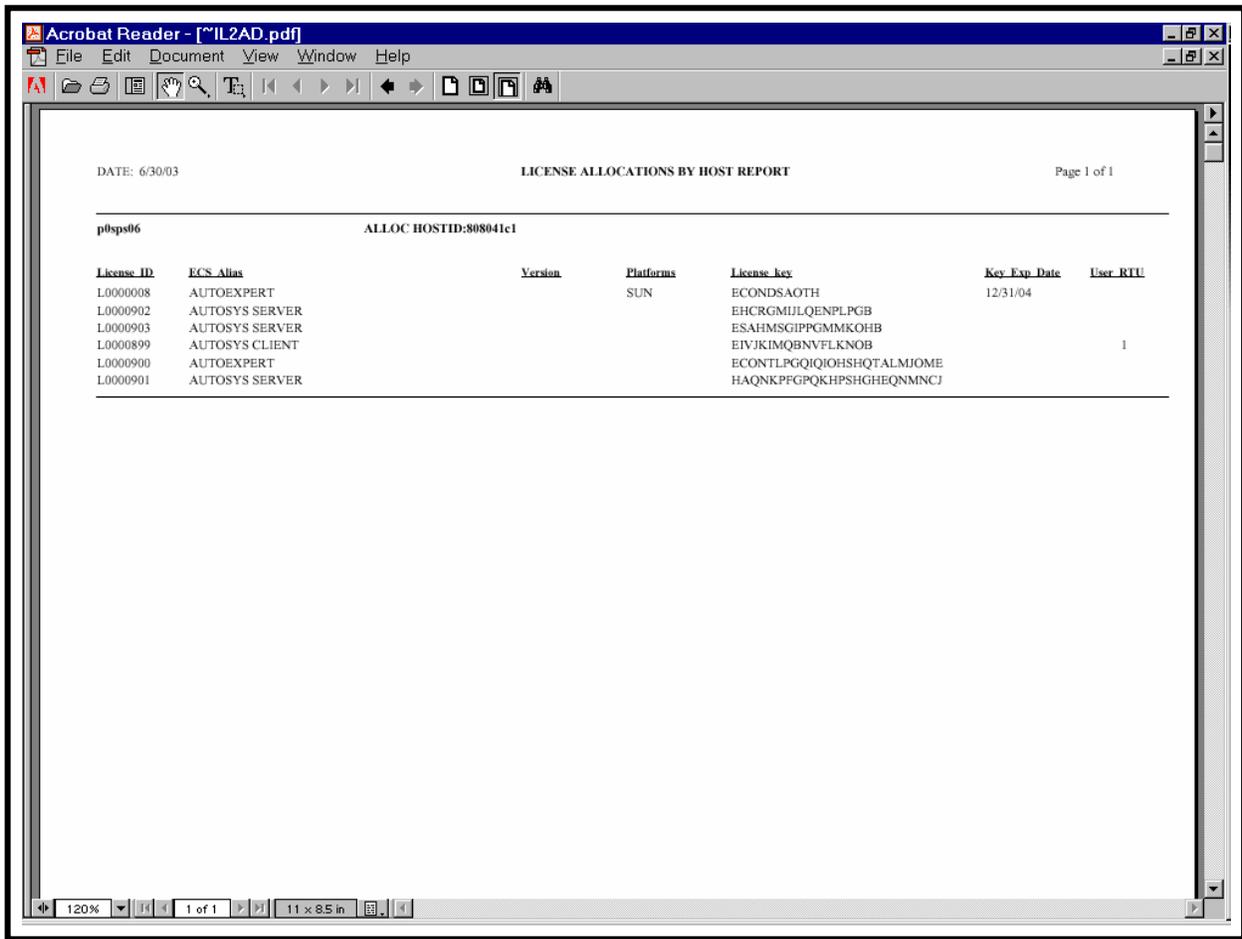


Figure 27.5.3-4. License Allocation By Host Report GUI

Acrobat Reader - [~\IL2BA.pdf]

Date: 6/30/03 1:40:00PM License Allocations By Product Page 1 of 2

CLEARCASE		Version:	Features:			
<u>License_ID</u>	<u>Host_Name</u>	<u>Host_ID</u>	<u>License_key</u>	<u>Key_Exp_Date</u>	<u>Platforms</u>	<u>User_RTU</u>
L0000450	t1mss04	807fc113	387d2a2e.01ee9020.02	10/31/02		5
L0000451	n0mss02	8080579b7	387d2a01.03aa6d75.02	10/31/02		10
L0000452	p0mss02	8080bfb7	387e702e.79ff224.02	10/31/02		2
L0000453	p0mss02	8080bfb7	387e7228.528a5aad.02	10/31/02		15
L0000454	p0mss02	8080bfb7	387e717b.f4b05dab.02	10/31/02		6
L0000455	p0mss02	8080bfb7	387e70be.9600a857.02	10/31/02		5
L0000456	m0mss02	8080fd39	387d28fe.3da6012e.02	10/31/02		1
L0000457	g0mss02	8080c9e8	387d287f.95f02f0b.02	10/31/02		9

120% 1 of 2 11 x 8.5 in

Figure 27.5.3-5. License Allocation By Product Report GUI

27.5.4 ILM-License Mapping GUI

The ILM-License Mapping form (Figure 27.5.4-1) manages the mapping of a license to purchased entitlements and specifies how many node and/or user rights-to-use the license is consuming from each. The form ensures that:

- a) The rights-to-use attributed to an entitlement do not exceed the entitlement's rights remaining;
- b) The sum of the rights being attributed to all entitlements does not exceed the rights-to-use for the license.

The screenshot shows a web browser window titled "Remedy User - [ILM-License Mapping (New)]". The main content area is titled "New ILM-License Mapping" and "License-Entitlement Mapping". It contains several input fields and buttons:

- License ID**:
- Entitlement ID**:
- MFR**:
- ECS Alias**:
- License Type**:
- Submitter**: *Create Date*: *Last Modified By*:

Below these fields are two sections for rights-to-use:

- Node Rights-To-Use**:
 - Node Remaining:
 - Node Allocated:
- User Rights-To-Use**:
 - Lic Key User RTU:
 - User Remaining:
 - User Allocated:

At the bottom center is a button:

The status bar at the bottom shows "Ready", "ttran", and "155.157.31.23".

Figure 27.5.4-1. ILM-License Mapping GUI

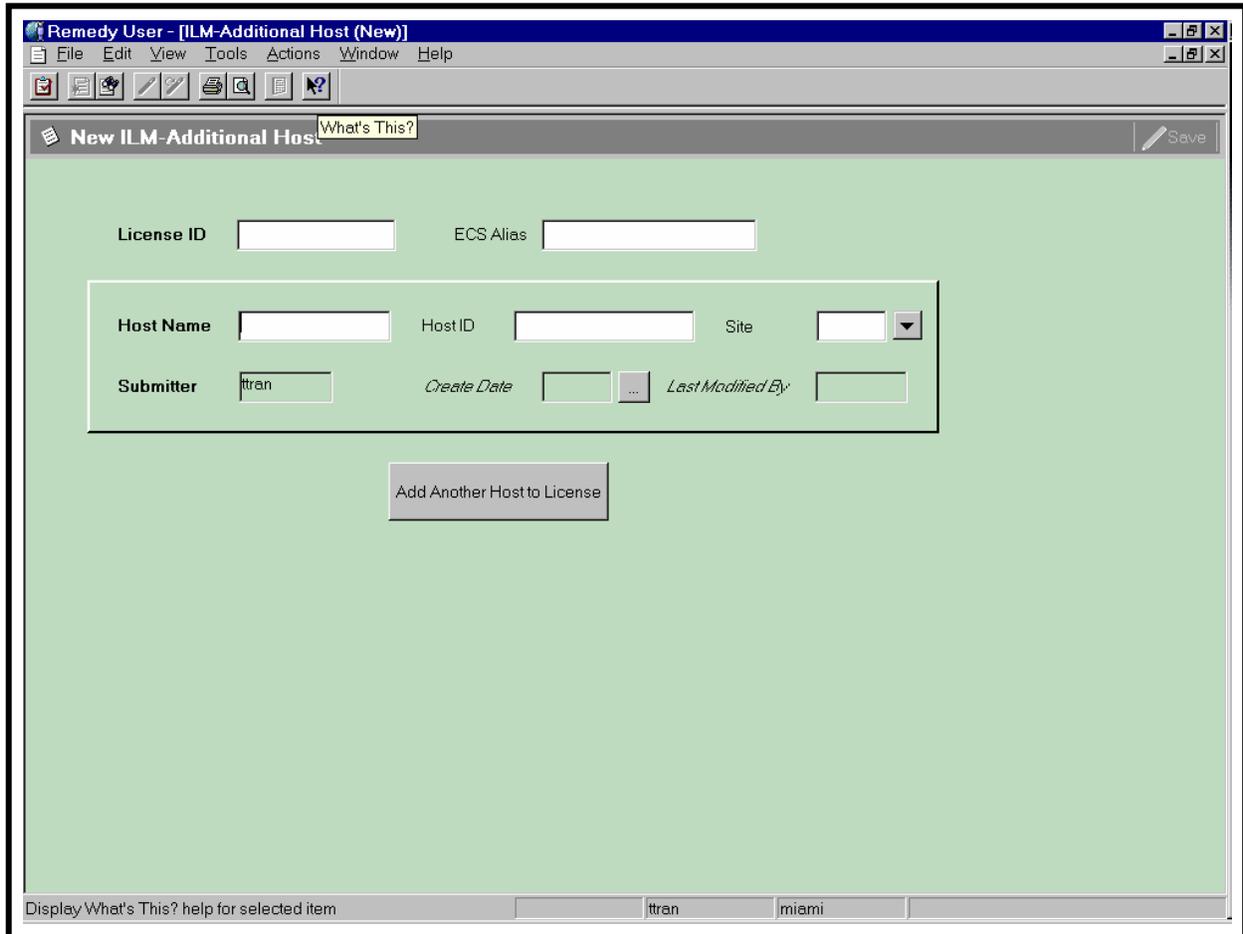
Table 27.5.4-1 describes the fields on the ILM-License Mapping form.

Table 27.5.4-1. ILM-License Mapping Field Descriptions

Field Name	Data Type	Size	Entry	Description
License ID	Char	10	System Supplies	Unique designator for a license.
Entitlement ID	Char	10	Required	Identifier for a purchased license entitlement.
ECS Alias	Char	40	System supplied	Common name used for the licensed product and all its versions and variants.
License Type	Char	16	System supplied	Classification that distinguishes among licenses according to rules of use.
MFR	Char	6	System supplied	Code for the manufacturer from whom the item was purchased. in the field above.
Lic Key User Rtu	Numeric	8	System supplied	Number of users authorized by the license to run the licensed product concurrently on a single network. This value limits the user rights-to-use that can be recorded in the license's allocation records.
Remain	Numeric	8	System supplied	Quantity of node or user rights under a license entitlement not yet consumed by the mapping of licenses to the entitlement.
Allocated	Numeric	8	Optional	Number of node or user rights-to-use to be counted under the entitlement as having been consumed by the license. The value may not exceed the current value plus the rights remaining under the entitlement.
Submitter	Char	30	System- supplied	The user that created the record.
Create Date	Date		System- supplied	Date the record was created.
Last Modified By	Char	30	System- supplied	The user who last modified the record.

27.5.5 ILM-Additional Host GUI

The ILM-Additional Host form (Figure 27.5.5-1) is used for maintaining records about backup or redundant license servers for machines to which a license has been allocated. Identifying additional hosts has no effect on calculations of entitlements node or user rights-to-use consumed or remaining, but is useful for tracking where redundant licenses are supposed to be or may be installed.



The screenshot shows a web browser window titled "Remedy User - [ILM-Additional Host (New)]". The browser's address bar and menu bar are visible. The main content area displays a form titled "New ILM-Additional Host" with a "What's This?" help icon and a "Save" button. The form contains the following fields:

- License ID:
- ECS Alias:
- Host Name:
- Host ID:
- Site:
- Submitter:
- Create Date:
- Last Modified By:

Below the form is a button labeled "Add Another Host to License". At the bottom of the browser window, the status bar shows "Display What's This? help for selected item" and the user's name "ttran" and "miami".

Figure 27.5.5-1. ILM-Additional Host GUI

Table 27.5.5-1 describes the fields on the ILM-Additional Host form.

Table 27.5.5-1. ILM-Additional Host Field Descriptions

Field Name	Data Type	Size	Entry	Description
License ID	Char	10	System Supplied	Unique designator for a license. Derived from the displayed license.
ECS Alias	Char	30	System Supplied	Common name used for the licensed product and all its versions and variants.
Host Name	Char	30	Optional	ECS name of a machine that is a backup or redundant license server for the one to which the license is principally allocated.
Host ID	Char	20	Optional	Host id of a machine that is a backup or redundant license server for the one to which the license is principally allocated.
Site	Char	6	Optional	Code for the site to which the license is allocated.
Submitter	Char	30	System-supplied	The user that created the record.
Create Date	Date		System-supplied	Date the record was created.
Last Modified By	Char	30	System-supplied	The user who last modified the record.

27.6 System Administrator Functions

27.6.1 ILM-System Parameters

The ILM-System Parameters form (Figure 27.6.1-1) is for maintaining system-wide Remedy-ILM parameters and is principally used for initializing certain identifier fields.

Several fields have particular significance for ILM. The Site ID field contains the code for the site where the operator's copy of Remedy is installed. The field is interrogated by ILM processes that have to determine which assets belong to the local site.

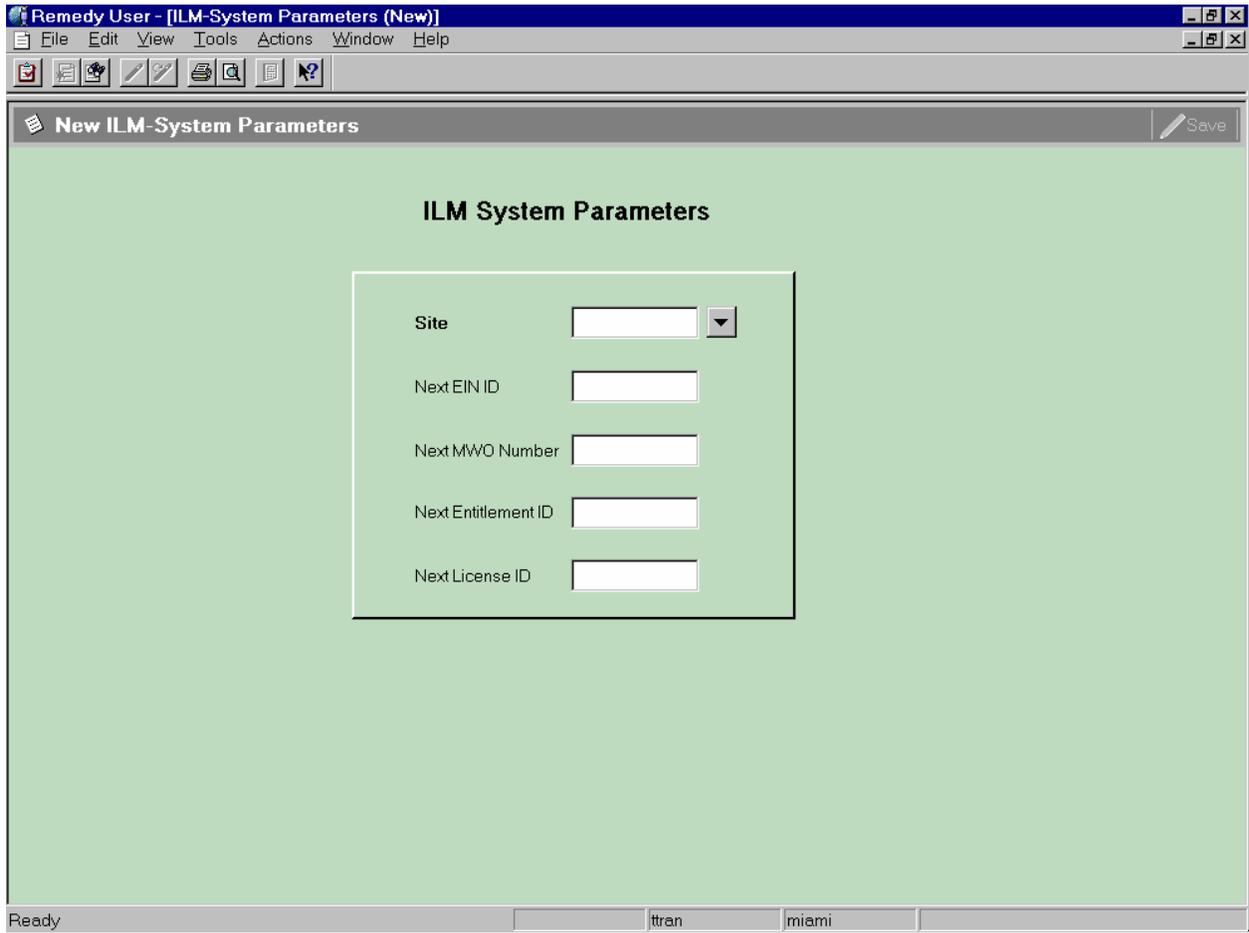


Figure 27.6.1-1. ILM-System Parameters GUI

Table 27.6.1-1 describes the fields on the ILM-System Parameters form.

Table 27.6.1-1. ILM-System Parameters Field Descriptions

Field Name	Data Type	Size	Entry	Description
Site	Char	6	Required	Code that identifies the site where this Remedy system is installed.
Last EIN	Char	20	System-supplied, but modifiable	Code used in determining the next sequentially available identifier when assigning EIN numbers automatically.
Last MWO	Char	10	System-supplied, but modifiable	The last MWO number used.
Last Entitlement ID	Char	10	System-supplied, but modifiable	The last entitlement id used.
Last License ID	Char	10	System-supplied, but modifiable	The last license id used.

27.6.2 User GUI

The User form, shown in Figure 27.6.2-1, is used by the administrator to add, modify, or remove users from the Action Request (AR) System. The "User" form is used in conjunction with the "Group" form to provide users with permissions ultimately determining which operations individual users can perform and which forms and fields they can access. For more information on the "User" form and the AR System access control, refer to the Action Request System Server Administrator's Guide.

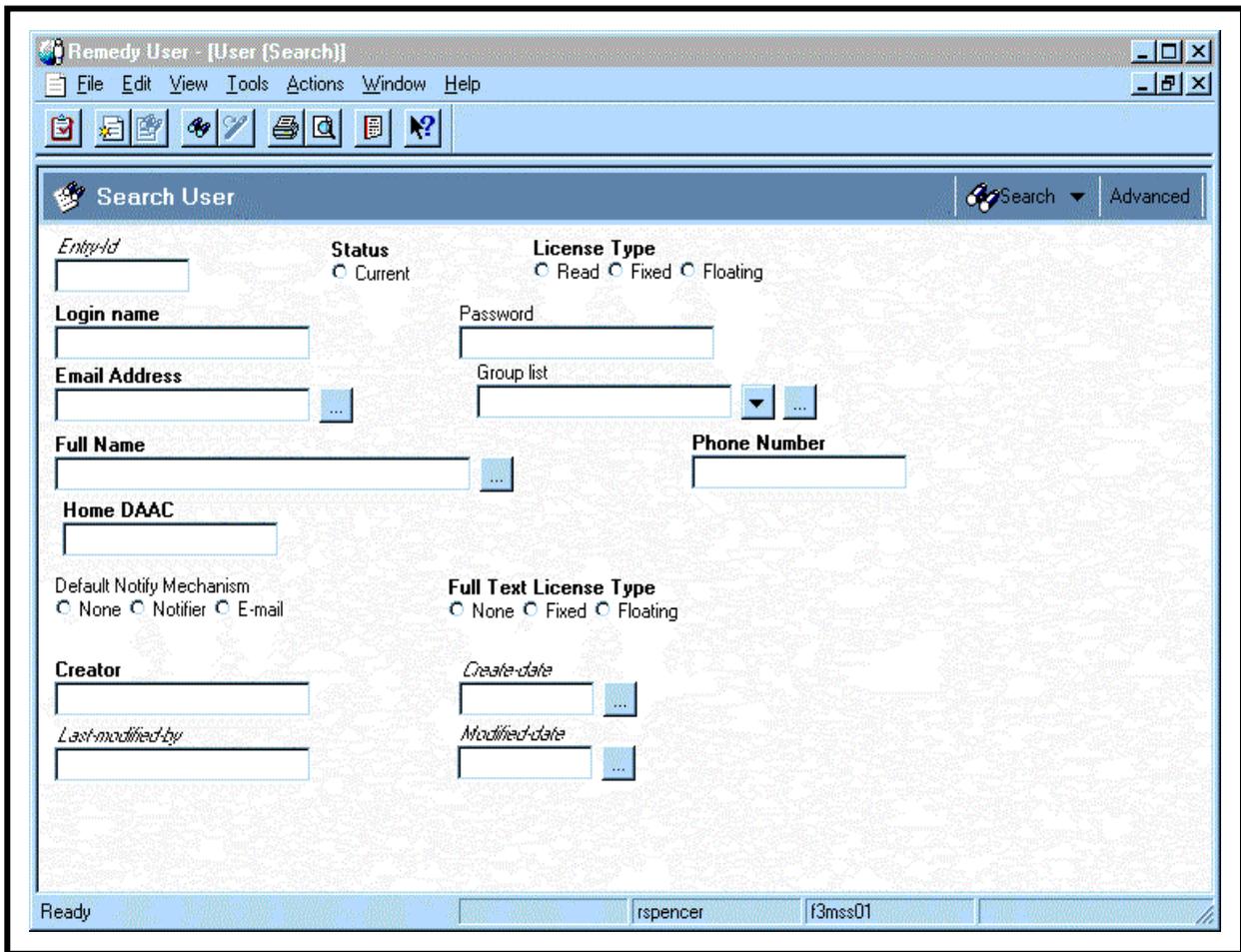


Figure 27.6.2-1. User GUI

Table 27.6.2-1. User Form Field Descriptions

Field Name	Data Type	Size	Entry	Description
Entry-Id	Character	15	System generated	Entry ID of user
Status	Selection	*	Required	Is user current or not as shown by the "current" button
License Type	Selection	*	Required	What type of license does this user have? (e.g., read, fixed, floating)
Login name	Character	30	Required	Login name of user
Password	Character	30	Optional	Password of User
Email Address	Character	255	Required	E-mail address of User
Group list	Character	255	Optional	Groups to which the user belongs
Full Name	Character	128	Required	Full Name of User
Phone Number	Character	55	Required	Phone Number of User
Home DAAC	Character	55	Required	Home DAAC of User
Default Notify Mechanism	Selection	*	Optional	Notification method (e.g., None, Notifier, and Email buttons)
Full Text License Type	Selection		Required	Not applicable
Creator	Character	30	Required	Person who created the user account
Create-date	Date/Time	17	System generated	Date and time the entry was created at the present site (mm/dd/yy hh:mm:ss)
Last-modified-by	Character	30	System generated	User ID of person that last modified the user entry
Modified-date	Date/Time	17	System generated	Date and time of last modification to user entry (mm/dd/yy hh:mm:ss)

***NOTE: the size of a field with a "selection" data type can vary and the size is automatically adjusted to the size of the item selected from the selection list.**

27.6.3 Remedy's Admin Tool GUI

The Remedy Administrator Tool is the tool one uses to create, modify, and delete Remedy objects (e.g. forms and menus). Figure 27.6.3-1 shows the main Administrator Tool GUI and its starting screen, the server window, and the workflow objects categories.

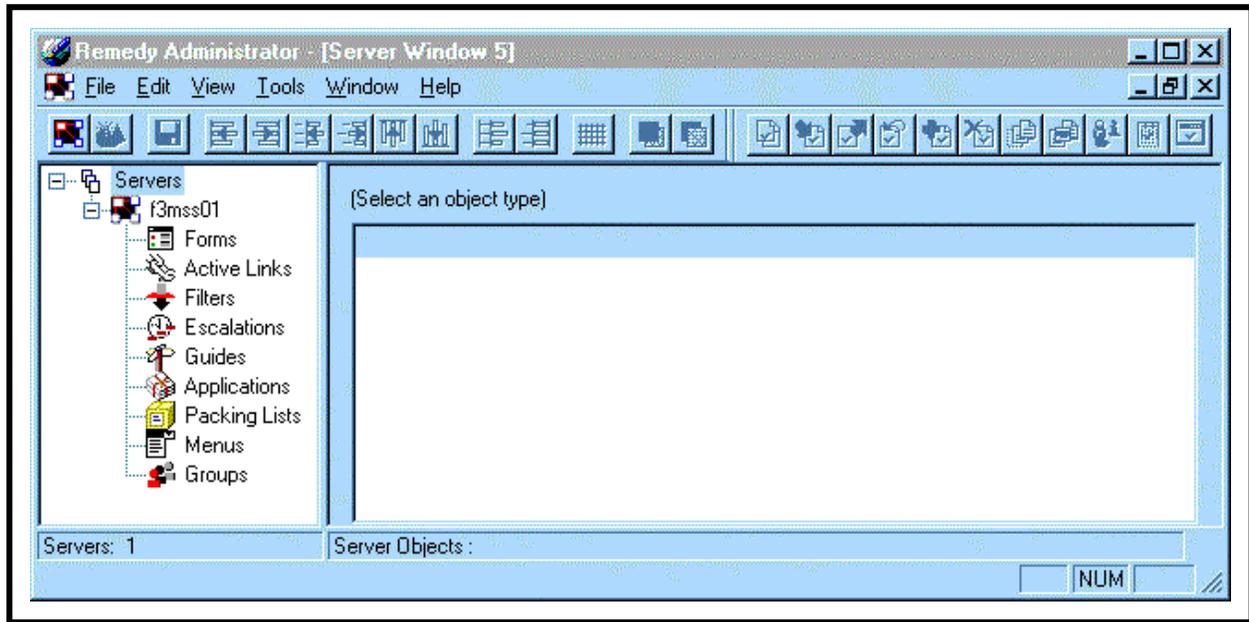


Figure 27.6.3-1. Admin Tool GUI

Table 27.6.3-1 provides a description of the Admin Tool GUI Workflow objects. For more information on these options, see *Remedy's Action Request System Administrator's Guide*, Vol. 1, Chapter 4, and/or the Remedy Administrator Tutorial using the Administrator Tool's Help menu.

Table 27.6.3-1. Admin Tool GUI, Workflow Object Descriptions

Workflow Object	Size	Entry	Description
Forms	Variable	System Generated	List of available forms.
Active links	Variable	System Generated	List of available active links.
Filters	Variable	System Generated	List of available filters.
Escalations	Variable	System Generated	List of available escalations.
Guides	Variable	System Generated	List of available guides.
Applications	Variable	System Generated	List of available applications.
Packing lists	Variable	System Generated	List of available packing lists.
Menus	Variable	System Generated	List of available menus.
Groups	Variable	System Generated	List of available groups.

27.6.4 Databases

Remedy's Action Request System uses a Sybase database called AR System. Tables and columns are created, modified, and deleted when forms are built and edited. This is all done automatically and is invisible to the user.

27.6.5 Special Constraints

Note that while ILM forms are open to all operators, and operators have view privileges to the user form, only system administrators have the ability to modify forms and tools presented in this section. Privileges are set according to DAAC policy.

27.6.6 Event and Error Messages

For Remedy's Action Request System's system messages see the *Action Request System Error Messages Guide*.

Table 27.6.6-1 lists non-system failure related messages that appear on the operator's screen.

Table 27.6.6-1. Non System-Failure Related Error Messages (1 of 6)

Error Message Char	Cause	Action
Inventory Management		
Parent EIN does not exist. Enter the correct Parent EIN.	Attempting to associate a component EIN to a Parent EIN that does not exist.	Enter the correct Parent EIN.
Parent EIN, \$Parent EIN\$, is a component. Please enter the correct Parent EIN number.	Attempting to associate a component EIN to a Parent EIN that is a component to another EIN Structure.	Enter the correct Parent EIN.
Parent EIN, \$Parent EIN\$, is not hardware. Enter the correct Parent EIN!	Attempting to associate a component EIN to a Parent EIN that is not hardware.	Enter the correct Parent EIN.
Part not found. Add new part into the part table or enter the correct part no.	Attempting to enter a part no. that does not exist in the database.	Enter the correct Part No into the ILM-OEM Parts form or enter the correct part no.
Part Number, \$Part No\$, already exists. Enter the correct Part Number!	Attempting to add a new Part No. enter the ILM-OEM Parts form where the Part No. already existed in the form.	Enter the correct Part number.
EIN is a component to Parent EIN. Update the Parent EIN's ECS name instead.	Attempting to update an ECS Name of a component EIN.	Update the Parent EIN's ECS Name.
New Parent EIN is the same as the old Parent EIN. Enter the correct new Parent EIN.	Attempting to relocate to relocate an item to the same Parent EIN.	Enter the correct New Parent EIN.
EIN already existed. Enter the correct EIN.	Attempting to create a new EIN that is already existed in the database.	Enter the correct EIN number.

Table 27.6.6-1. Non System-Failure Related Error Messages (2 of 6)

Error Message Char	Cause	Action
A record for Location, \$Location\$, with Building, \$Building\$, already exists. Enter the correct Location and its associated Building!	Attempting to create a new location in the ILM-Inventory location form where the combination of location and building values already existed in the form.	Do not enter the new location and use the existed one.
EIN (\$EIN\$) is a Parent to EIN (\$EIN is Parent\$). Cannot assign a Parent to another Parent structure.	Attempting to assign a Parent EIN as a component to an EIN structure.	Verify the Component EIN and the Parent EIN.
Audit Date (\$Audit Date\$) cannot be greater than current date. Enter the correct audit date.	Attempting to update the audit date to a date greater than the current date.	Enter the correct audit date.
Receive Date (\$Receive Date\$) cannot be greater than the current date (\$DATE\$). Enter the correct receive date.	Attempting to update the receive date to a date greater than the current date.	Enter the correct receive date.
Vendor ID, \$Vendor ID\$, already exists. Enter the correct Vendor ID!	Attempting to add a new vendor id that already existed in the ILM-Vendor-MFR form.	Use the existing Vendor ID if the vendor name is the same. If the vendor name is not the same, use another code to define the new vendor.
Site, \$Site\$, already exists. Enter the correct Site!	Attempting to add a site code that already existed in the ILM-Site form.	Use the existing site code.
Item Status, \$Item Status\$, already exists. Enter the correct Item Status!	Attempting to add a new item status that already existed in the ILM-Status Code form.	Enter the correct item status.
EIN Transactions		
Parent EIN field is a required. Enter a Parent EIN value into the Parent EIN field.	Attempting to perform an EIN transaction where the Parent EIN value is not provided in the Parent EIN field.	Enter the correct Parent EIN value into the Parent EIN.
Parent EIN (\$Parent EIN\$) does not exist. Enter the correct Parent EIN.	Attempting to perform an EIN transaction on the Parent EIN where the Parent EIN does not exist in the ILM-EIN form.	Enter the correct Parent EIN.
Parent EIN, \$Parent EIN\$ is a component of Parent EIN \$Temp Parent Parent\$. Perform transaction on the Parent EIN, \$Temp Parent Parent\$ instead.	Attempting to perform an EIN transaction on a component.	Enter the correct Parent EIN.

Table 27.6.6-1. Non System-Failure Related Error Messages (3 of 6)

Error Message Char	Cause	Action
One or more of these fields is not completed (Archive (P)arent-(C)omponent and Archive Type. Enter values into both of these fields and execute the transaction again.	Attempting to perform an archive transaction where the Archive (P)arent-(C)omponent and/or Archive Type field(s) is/are not completed.	Complete both of these fields.
New Parent EIN is a component to Parent EIN (\$Temp New Parent Parent\$). Enter another New Parent EIN.	Attempting to relocate component(s) to a new Parent EIN where the new Parent EIN is a component to another EIN Structure.	Enter the correct new parent EIN.
New Parent EIN does not exist. Enter another New Parent EIN.	Attempting to relocate component(s) to a new parent EIN where the new parent EIN does not exist in the ILM-EIN form.	Enter the correct new parent EIN.
New Parent EIN (\$New Parent EIN\$) is not hardware. Enter another New Parent EIN value.	Attempting to relocate component(s) to a new parent EIN where the new parent EIN is something else other than hardware.	Enter the correct new parent EIN.
New Parent EIN (\$New Parent EIN\$) is the same as the old Parent EIN. Enter another new Parent EIN.	Attempting to relocate component(s) to a new parent EIN where the new parent EIN is the same as the old parent EIN	Enter the correct new parent EIN.
New Location values (New Location, New Building, or New Room) are not completed. Complete all the new location values.	Attempting to perform a transaction where all the new location values are not completed.	Make sure all the new location values are completed.
Maintenance Work Order		
Parent EIN (\$Parent EIN\$) does not exist. Enter the correct Parent EIN.	Attempting to create a new maintenance work order where the Parent EIN does not exist in the ILM-EIN form.	Enter the correct Parent EIN.
EIN, \$Parent EIN\$, is not a parent. Enter the correct Parent EIN!	Attempting to create a new MWO where the parent EIN entered is a component of some EIN structure.	Enter the correct parent EIN.
ALDT 1 End Date-Time (\$ALDT End Date-Time\$) cannot be greater than current date.	Attempting to enter an ALDT End Date-Time that is greater than the current date and time.	Enter the correct ALDT End date-time.
Notification Date (\$Notification Date-Time\$) cannot be greater than current date.	Attempting to enter a notification Date-Time that is greater than the current date and time.	Enter the correct notification date-time.
Vendor Complete Date-Time (\$Vendor Complete Date-Time\$) cannot be greater than current date.	Attempting to enter a vendor complete Date-Time that is greater than the current date and time.	Enter the correct vendor complete date-time.

Table 27.6.6-1. Non System-Failure Related Error Messages (4 of 6)

Error Message Char	Cause	Action
Vendor Call Date-Time (\$Vendor Call Date-Time\$) cannot be greater than current date.	Attempting to enter a vendor call Date-Time that is greater than the current date and time.	Enter the correct vendor call date-time.
ALDT Start Date-Time (\$ALDT Start Date-Time\$) cannot be greater than current date.	Attempting to enter an ALDT start Date-Time that is greater than the current date and time.	Enter the correct ALDT start date-time.
Failure Date (\$Failure Date-Time\$) cannot be greater than current date.	Attempting to enter a failure Date-Time that is greater than the current date and time.	Enter the correct failure date-time.
Vendor Arrive Date-Time (\$Vendor Arrive Date-Time\$) cannot be greater than current date.	Attempting to enter a vendor arrive Date-Time that is greater than the current date and time.	Enter the correct vendor arrive date-time.
Vendor Initial Response Date-Time (\$Vendor Initial Resp Date-Time\$) cannot be greater than current date.	Attempting to enter a vendor initial response Date-Time that is greater than the current date and time.	Enter the correct vendor initial response date-time.
The MWO must already be created and you must have the MWO displayed in a Search/Modify window before clicking the Add Fail-Replacement Component Button!	Attempting to add a new work order line item where the work order information is blank.	Use the ILM-MWO form to find the appropriate work order and press the "Add Fail-Replacement Component" button to start adding line items to that work order.
Component EIN is the same as the MWO Parent EIN. Enter the correct component EIN.	Attempting to add a work order line item where the component EIN is the same as the MWO's Parent EIN.	Enter the correct component EIN.
New Parent EIN is the same as the MWO's Parent EIN. Enter the correct New Parent EIN.	Attempting to add a work order line item to move a component to a new EIN structure where the new parent EIN is the same as the MWO's Parent EIN.	Enter the correct new parent EIN value.
New Parent EIN (\$New Parent EIN\$) is a component to Parent EIN (\$New Parent EIN Parent\$). Enter the correct New Parent EIN value	Attempting to add a work order line item to move a component to a new EIN structure where the new parent EIN is the same as the MWO's Parent EIN.	Enter the correct new parent EIN value.
New Parent EIN does not exist. Enter the correct New Parent EIN.	Attempting to add a work order line item to move a component to a new EIN structure where the new parent EIN does not exist in the ILM-EIN form.	Enter the correct new parent EIN value.
New Parent EIN is not hardware. Enter the correct New Parent EIN value.	Attempting to add a work order line item to move a component to a new EIN structure where the new parent EIN is not hardware.	Enter the correct new parent EIN value.

Table 27.6.6-1. Non-System-Failure Related Error Messages (5 of 6)

Error Message Char	Cause	Action
License Management		
Component EIN is a parent. Enter the correct Component EIN value.	Attempting to add a work order line item where the component EIN is a parent.	Enter the correct component EIN value.
Line Item does not have the correct event type and maint code. Enter the correct event type and maint code.	Entering the incorrect combination of event type and maint code in the ILM-MWO Line Item form.	Enter the correct event type and maint code.
Entitlement Part No. does not exist. Enter the correct part number or add the new part into the ILM-License Entitlement Part form.	Attempting to associate entitlement with an Entitlement Part No. that does not exist in the ILM-License Entitlement Form.	Enter the correct part number or add the new part into the ILM-License Entitlement Part form.
Contract ID, \$Contract ID\$, already exists. Enter the correct Contract ID!	Attempting to associate a license entitlement with a contract ID where the contract id does not exist in the ILM-Maint contract form.	Enter the correct contract ID.
Entitlement ID does not exist. Enter the correct Entitlement ID.	Attempting to map a license to a purchased entitlement that does not exist in the ILM-Entitlement form.	Enter the correct Entitlement ID.
Node allocated is greater than Node remaining. Reduce number of Right-To-Use or enter another Entitlement ID.	Attempting to map a license to an entitlement where the entitlement node remaining is less than the amount allocating.	Reduce the number of node allocated.
User Allocated is greater than License Key User RTU allocated to the license. Enter the correct User Allocated value.	Attempting to map a license to an entitlement where the user allocated is greater than the license key user rights-to-use.	Reduce the user allocated to equal to or less than the license key RTU.
User Allocated is greater than User RTU Remaining. Lower User Allocated or Enter another Entitlement ID.	Attempting to map a license to an entitlement where the user allocated is greater than the entitlement user rights-to-use remaining	Reduce the user allocated.
This license right-to-use had already been mapped to entitlement \$Ent ID Holder\$.	Attempting to map a node lock license to more than one entitlement.	Do not map the license to another entitlement.
Total user allocated (\$Total User Allocated\$) is greater than the lic key user RTU. Reduce number of User Allocated	Attempting to map a license to entitlements where the total user allocated is greater than the license key user rights-to-use.	Reduce the user allocated to equal to or less than the license key RTU.
Node allocated or User allocated has not been assigned to this Entitlement ID (\$Entitlement ID\$).	Attempting to map a license to an entitlement where the user did not enter any value in the Node or user allocated.	Enter node or user allocated to map against the entitlement.

Table 27.6.6-1. Non-System-Failure Related Error Messages (6 of 6)

Error Message Char	Cause	Action
Node Allocated cannot be greater than one for nodelock licenses. Enter 1 to allocate 1 Right-To-Use for this Nodelock license.	Attempting to allocate more than 1 node rights-to-use for a node lock license.	Reduce the number of node rtu allocated to 1.
Combination of Entitlement Part No-MFR and Version \$Temp PN_MFR_Ver\$ already existed. Enter the correct Entitlement Part No.	Attempting to add a new entitlement part into the ILM-License Products form where the combination of the Entitlement Part No, MFR, and version already existed in the database.	Use the existing entitlement part information.

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28. Maintenance of Configuration Parameters

This chapter concerns the maintenance of configuration parameters that system servers access when they are started. The configuration parameters are manageable through a *Configuration Registry*. The Configuration Registry Server provides a single interface to retrieve configuration attribute-value pairs for system servers from the Configuration Registry Database, via a Sybase Server. The Configuration Registry Server maintains an internal representation of the tree in which configuration attribute-value pairs are stored. General configuration parameters used by many servers are stored in higher nodes in the tree. Parameters specific to a single system server are contained in the leaf nodes of the tree.

The EMD project provides a script tool to load the Configuration Registry database from data in configuration files. This loading is a one-time event to populate the Registry database with the information contained in .CFG files. Once the Configuration Registry is loaded, if the configuration files are moved, renamed, or otherwise made inaccessible to the software, the software goes to the Configuration Registry to obtain needed configuration parameters. There is also a Configuration Registry GUI to view and edit configuration data in the database. Changes to the Configuration Registry are typically under the control of Configuration Management and the Database Administrator.

28.1 Parameter Change Control Procedure

Configuration parameters are 'controlled' by either DAAC or the EDF. Proposed changes to these configuration parameters originate from the controller of these parameters, in most cases. The one exception is when new software/hardware patches or versions warrant new configuration parameters, or changes to the existing parameters. In cases where one of the entities, i.e., DAAC or EDF, proposes a change to an existing configuration parameter which it does not control, then the requesting entity follows the appropriate EMD change request, resolution and CCB approval process of the entity that controls that parameter. The EMD configuration change request process is described in Chapter 12 of the Release 7.20 release notes. This is formally posted on *EMD Baseline Information System (EBIS)* under "Technical Documents-EMD Baseline Technical Documentation).

Configuration parameter baseline documents define information on various areas of the system. These areas include, but are not limited to the following:

- Custom code configuration, program and application configuration files and parameters.
- Sybase server databases.
- Operating System - build, options of auto mount, and kernel configuration files and parameters
- COTS configuration files and parameters.

The information captured is site- and host-specific, wherever applicable. Whenever possible the following ‘types’ of information are captured:

- Configuration parameters and files.
- Definitions and descriptions of parameters.
- Recommended value.
- Value or value ranges; i.e., common range across multiple DAACs or DAAC-specific range.
- Impacts associated with changing a parameter.
- Controlling entity of the parameter (e.g., DAAC or EDF).

The baselined documents are maintained by EMD CM, and are posted on the EMD Baseline Information System (EBIS) Site (<http://pete.hitc.com/baseline/>). The baselined information is replicated and posted on a mirror site (<http://cmdm-ldo.raytheon.com/baseline/>) for DAACs’ accessibility and review.

All changes to system software/hardware patches and versions are controlled by the relevant CCBs. (Refer to Chapter 12.of the 7.20 Release Notes) posted.on *EMD Baseline Information System (EBIS)* under “Release notes).

A prototype (non-baselined) version of the configuration information may be posted on the EBIS and mirror site for EMD and DAAC review prior to the CCB approval process, as long as the posted information is clearly identified as 'prototype' to distinguish it from the EMD baselined information.

28.2 Overview of Configuration Parameter Files

Various types of source files are used to modify the configuration parameters at the Landover functionality labs and at the DAACs. These are as follows:

- The 'mkcfg' scripts contain persistent values of configuration parameters, and only EMD developers are allowed to modify them.
- The '.cfgparms', '.extparms' and '.dbparms' files, which are resident in ClearCase and contain persistent values of configuration parameters for the EDF. The versions of these files delivered to the DAACs contain DAAC-specific and mode-specific values. The .cfgparms files hold parameters used to generate the standard .CFG files. The .extparms files contain parameters to generate non-standard (or extension) files, and are not used by most subsystems. The .dbparms files hold parameters used in database operations.
- The .cfgparms file patches the .cfgparms, .extparms and .dbparms. Changes are from one version to another, e.g., 7A.01 to 7A.02.
- The '.rgypatch' file patches the registry database.

28.3 Overview of Configuration Registry

The Registry Database is initially created with parameters from the .CFG files that are generated by running ECS Assistant's mkcfg process. In future other files such as the .PCFG and .ACFG files may be housed in the registry database. There are several processes that can be used to add,

update or delete a parameter. A .rgypatch file can be used to make a change to a registry configuration parameter. Another method of making changes to the parameters in the registry is to use the Registry GUI. The final method that can be used to make a change to the registry is to use the EcCoPopulateRegistry. This tool inserts *.CFG files into the registry. The only drawback is parameter history is lost.

System servers use a single class to access .CFG files. This class was modified to request values from the registry servers, if there is no .CFG file present. The registry server then obtains the requested values from the registry database, and returns them to the requester. It is important to note that the registry server provides read-only access to the configuration parameters, and caches non-leaf nodes. Therefore changes made via the GUI which is mode specific, do not take effect until the affected servers have been restarted. If a non-leaf node is added, deleted, or updated, the changes do not take effect until the registry server has been restarted and then the affected servers have been restarted.

The registry schema contains provision for Access Control List (ACL) processing. This restricts read and write privileges. For example, the write privileges of the registry in the OPS mode could be granted to individuals in a supervisory role, while read privileges could be non-supervisory.

28.3.1 Registry Deployment and Baseline Maintenance

Registry changes can be made by anyone having the DBO privileges. Any changes to the configuration parameter baseline, such as addition, deletion or modifications of parameters, should follow the respective CCB process.

System servers use the .CFG files, if present in /usr/ecs/<mode>/CUSTOM/cfg directory when the server is started. Otherwise the servers use the registry database for configuration parameters. Therefore, moving or renaming the .CFG files causes servers to use the registry the next time they restart. This allows the registry to be brought online, and taken offline on a server-by-server basis.

Maintenance of parameters in the registry must be via the registry GUI or via database patches. Changes to the .CFG files or the .cfgparms files will not result in changes to the registry unless the files are re-imported into the registry. The ability to create .CFG files during the "make config" phase of ECS Assist processing can be switched off (via a configuration parameter). The addition, deletion and modification of values in the registry are achieved either by the GUI or by a database patch script.

The EDF maintains the "baseline" registry database that is used to generate the database patches. The baseline registry database has the structure of a generic DAAC, using functional host names rather than actual host names. It contains the master values of parameters owned by the EDF, and contains null values for parameters owned by the configuration management process. EMD developers make changes to the baseline database via the software configuration management process. The database contains an attribute tree for each release, and release patch supported by the EDF. Prior to a release or a release patch, a configuration patch script is created by comparing the tree for the new release with the tree for the release being replaced. The patch

script contains a series of add, update and delete statements, tagged to indicate the sites they pertain to. The primary purpose of the patch is to enhance the process of parameter additions, modifications or deletions to the DAAC configuration. The patch is also used to propagate value changes for parameters owned by the EDF.

28.3.2 How to Run a Mkcfcg

There are two ways to run a Mkcfcg. The first way is to manually execute the Mkcfcgs from the command line and the second is to use EcsAssist. The latest version of the 609-EMD-001 document contains information on how to use EcsAssist to run a Mkcfcg. To run a Mkcfcg manually do the following:

1. `cd /usr/ecs/<MODE>/CUSTOM/utilities`
2. Locate the Mkcfcg you wish to run by using the `ls` command (`ls -l *Mkcfcg`).
3. Run the Mkcfcg by running the appropriate script followed by the MODE. For example:
`EcPIPRGeneratorMkcfcg TS1`

28.3.3 Registry

28.3.4 How to Apply a Registry Patch

Note: Application of the registry patch process will not be implemented for the 7.20 software release.

28.3.5 How to Run the Registry Population Tool

The population tool can be run once on each machine on which .CFG files are being created or once for the entire mode. For the 7.20 installation, it is recommended that the Population tool be used on a platform-by-platform basis.

Follow the steps listed below, supplying the hostname when running the population tool from the command line as identified below.

The command to run the tool is:

```
/tools/common/ea/EcCoPopulateRegistry MODE {HostName|ALL}  
{ConfigFileName|ALL} DbServerName DbUserName DbName  
AttributeTreeName
```

The following parameters are used:

MODE - the mode that you are working in.

HostName – the name of the host (like g0dis02). If you use ALL you will load all .CFG files into the indicated registry tree. If you do this, you must be on a Linux and you must have secure shell properly installed.

ConfigFileName – ALL – **Note:** Use the ALL option to load all configuration files under `/usr/ecs/MODE/CUSTOM/cfg`. If you enter an individual config file

name, you must give the fully qualified path name like
/usr/ecs/<MODE>/CUSTOM/cfg/EcDsDistributionServer.CFG. **(For this
installation always use ALL.)**

DbServerName - SQL server name where Registry Database resides.

DbUserName – Registry database dbo name.

DbName – EcCsRegistry_<mode>. For OPS, use EcCsRegistry.

AttributeTreeName – the form is <mode>_<release>. For example, OPS_703.

You should enter the name of the tree you created in section 11.2.3.

The Population Tool will report the success or failure status back to the screen for each configuration file. When all files have been loaded, rename the .CFG files as .CFG.rgy files unless indicated otherwise.

The following commands can be used:

For one file: ‘mv <filename> <filename>.rgy’

For multiple files (in c shell):

```
foreach file (*.CFG)↵  
mv $file $file.rgy↵  
end
```

IMPORTANT NOTE:

Some things do not run from the registry. These include EcDsDdCLI and EcOmEPD. Also no part of the SSS or DPL (with the exception of EcDIQuickServer) runs from the registry.

At Landover we always “diff” newly generated .CFG files with .rgy files before we populate the registry with any newly generated .CFG files. When we move the .CFG files into the registry, we copy back the appropriate files to .CFG files in order to have both .CFG files and .rgy files.

For example on the Queuing Server (xxspsnn) we populate the Registry with EcDpPrEM.CFG, move the file to EcDpPrEM.CFG.rgy and then copy the EcDpPrEM.CFG.rgy to EcDpPrEM.CFG. Then next time the make config for the Queuing Server is run we can diff all the newly generated .CFG files with the “old” .rgy files

The following commands can be used:

For one file: ‘diff file.CFG file.CFG.rgy’

For multiple files (in c shell):

```
foreach file (*.CFG)↵  
echo $file ↵
```

```
diff $file $file.rgy.␣
end
```

Differences can easily be resolved before the Registry is populated

28.4 Configuration Registry Procedures

Table 28.4-1 contains the Configuration Registry Activity Checklist.

Table 28.4-1. Configuration Registry - Activity Checklist

Order	Role	Task	Section	Complete?
1	SA	Registry Preparation Procedure	(P) 28.4.1	
2	SA	Registry Database Backup Procedure	(P) 28.4.2	
3	SA	Registry Patch Procedure	(P) 28.4.3	
4	SA	Display Parameters Using the Configuration Registry GUI	(P) 28.4.4	

28.4.1 Registry Preparation Procedure

- 1 Ensure that the registry database has been backed up.
 - For detailed instructions refer to Section 28.4.2, **Registry Database Backup Procedure**.
- 2 Start the registry GUI for the mode into which the required software release is being installed.
- 3 Select the attribute tree name that is mapped to the current mode from the drop-down menu
 - When the correct tree is selected, the name of the mode should appear in the "**Attribute Information**" box below).
- 4 Click on the name of the attribute tree in the window below (the window with a white background), to enable the menu icons.
- 5 Click on the **Copy selected item** icon (the icon on the left).
- 6 Enter the name of the new registry tree in the **Attribute Name** box.
- 7 Select the **Ok** button.
- 8 Wait for the new tree to be created.

NOTE: It may take a long time for the new tree to be created -- on the order of 30 minutes).

- 9 Select the newly-created tree name in the window.
 - 10 Click on the **MAP** icon.
 - 11 Select the mode name from the drop-down menu in the new window that appears.
 - 12 Select **Ok**.
 - 13 Exit the GUI by selecting the **File** → **Exit** menu option.
-

The Registry database should be regularly (e.g., nightly) backed up via the Sybase dumps. (The DAACs should have added the registry db to their list of databases for backup).

28.4.2 Registry Database Backup Procedure

- 1 To make a backup copy of a tree within the registry, just click on the "copy" in the registry GUI before making modifications to the tree.
 - 2 To make a backup copy of a tree and dump it to a file first click on **Add New Tree** at the bottom of the tree display in the GUI.
 - 3 Select the **Create Registry Patch** option from the menu
 - 4 Specify the new tree (which is empty) and the tree that you want to copy.
 - This produces a file containing the tree in the rgypatch format.
-

Patch the Registry Database using the **.rgypatch** file.

28.4.3 Registry Patch Procedure

- 1 From the ECS Assist Subsystem Manager, select the appropriate Mode, Subsystem, and Component from the main window.
- 2 Select **Registry Data Patch** from the **Tools** menu.
 - An **Apply Registry Data Patch** window is displayed.
- 3 In the **Apply Registry Data Patch** window enter the name of the SQL server in the **Registry Database Server:** box.
- 4 Enter the registry database DBO ID.

- 5 Enter the registry database password.
- 6 In the **Registry DB Name:** box enter the name of the registry database (**EcCsRegistry_<mode>**) and press the **ENTER** key.
 - ECS Assist connects to the registry database and populates the drop-down menu associated with the next field (**Tree to patch:**).
- 7 Use the drop-down menu to select the appropriate registry tree that is being patched.
 - If unsure which tree to select, bring up the registry GUI and verify which tree is mapped to the mode being updated.
- 8 Click on the **Select Patch File** button to bring up the **File Selection Dialog** window.
- 9 Navigate through this window to find the .rgypatch file.
 - If the installation was successful, it should appear in the /usr/ecs/<MODE>/CUSTOM/.installed/DMS directory).
- 10 Highlight the .rgypatch file in the window and select **OK**.
- 11 Verify that the appropriate information is indicated in the **Patch File:** box in the **Apply Registry Data Patch** window and select **OK**.
 - At this point, the registry patch will be applied.
- 12 Monitor the output via ECS Assist for any warning or error messages as the patch is run.

Display parameters using the Configuration Registry GUI.

28.4.4 Display Parameters Using the Configuration Registry GUI

- 1 On workstation **x0dms##**, at the UNIX prompt in a terminal window, type **/usr/ecs/mode/CUSTOM/utilities/EcCsRegistryGUIStart mode &** at a UNIX command prompt and then press the **Return/Enter** key (where **mode** is likely to be **TS1**, **TS2**, or **OPS**).
 - NOTE: The **x** in the workstation name will be a letter designating your site: **g** = GSFC, **m** = SMC, **l** = LaRC, **e** = EDC, **n** = NSIDC, **o** = ORNL, **a** = ASF, **j** = JPL; the **##** will be an identifying two-digit number (e.g., **g0dms03** indicates a data management subsystem workstation at GSFC). If you access the workstation through a secure shell remote login (ssh), you must enter **setenv DISPLAY <local_workstation IP address>:0.0** prior to the ssh before entering the command after the ssh. The **<ipaddress>** is the ip address of **x0mss##**, and **xterm** is required when entering this command on a Sun terminal.
 - The Database Login window is displayed with entries filled in for **User Id:** (e.g., **EcCsRegistry**), **Server:** (e.g., **x0icg02_svr**), and **DB Name:** (e.g., **EcCsRegistry_mode**).

- 2 In the Database Login window click in the **Password:** field and type the password.
 - The typed password is not displayed (dots are displayed in place of the password).
 - 3 Click on the **Sign On** button.
 - The Database Login window is closed and the Configuration Registry GUI is displayed.
 - 4 On the tree showing system hosts displayed on the left side of the GUI, click on the "+" sign next to one of the hosts for which parameters are to be displayed.
 - The tree displays a **config** branch.
 - 5 Click on the "+" next to **config**.
 - The tree displays a **CFG** branch.
 - 6 Click on the "+" next to **CFG**.
 - The tree displays the computer software components for the selected host.
 - 7 Click on one of the listed components (or its folder icon).
 - The **Attribute Listing** field displays the configuration parameters associated with the selected component. If there are a large number of parameters, the right side of the window will have a scroll bar that may be used to scroll down the list.
 - 8 Click on one of the listed parameters.
 - The **Attribute Information** pop-up window for the selected parameter is displayed, showing detailed information concerning the parameter.
 - If you are logged in with an account authorized with appropriate permissions, the **Attribute Information** window permits changing or deleting the parameter.
 - 9 To exit from the Configuration Registry GUI, follow menu path **File→Exit**.
-

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Abbreviations and Acronyms

Additional abbreviations and acronyms are listed in document 508-EMD-001, ACRONYMS for the EOSDIS Maintenance and Development (EMD) Project.

A _o	Operational Availability
ACL	Access Control List
ACS	Automated Cartridge System
ACSLs	Automated Cartridge Storage Library System
ADC	Affiliated Data Center (NOAA)
ADIC	Advanced Digital Information Corporation
ADSERV	Advertising Service
AFM	Affected File Metadata
AFL	Affected File List
AI&T	Algorithm Integration and Test
AIT	Algorithm Integration Team
ALOG	Application Log
AMASS	Archival Management and Storage System
APC	Access/Process Coordinators
API	Application Program Interface
APID	Applications Process Identifier
ASCII	American Standard Code for Information Interchange
ASTER	Advanced Spaceborne Thermal Emission and Reflection Radiometer
BMGT	Bulk Metadata Generation Tool
BBS	Bulletin Board System
BO	Bundling Order, Bundled Order
CAP	Cartridge Access Port
CCB	Configuration Control Board (NASA Convention)
CCR	Configuration Change Request
CCRS	Canada Centre for Remote Sensing

CD	Compact Disk
CDE	Common Desktop Environment
CD-ROM	Compact Disk - Read Only Memory
CDR	Critical Design Review
CDRL	Contract Data Requirements List
CDS	Cell Directory Service
CHCI	Communications Hardware Configuration Item
CHUI	Character User Interface
CI	Configuration Item
CIDM	Client Interoperability and Data Management
CLI	Command Line Interface
CM	Configuration Management
CMA	CM Administrator
CN	Change Notice
CO	Contracting Officer
COTR	Contracting Officer's Technical Representative
COTS	Commercial Off-the-Shelf (hardware or software)
CPU	Central Processing Unit
CR	Change Request
CRM	Change Request Manager
CSCI	Computer Software Configuration Item
CSMS	Communications and Systems Management Segment (ECS)
CSR	Consent To Ship Review
CSS	Communications Subsystem
DAA	Data Availability Acknowledgment
DAAC	Distributed Active Archive Center
DADS	Data Archive and Distribution System
DAN	Data Availability Notice
DAO	Data Assimilation Office
DAP	Delivered Algorithm Package

DAR	Data Acquisition Request
DAS	Data Availability Schedule
DAT	Digital Audio Tape
DB	Database
DBA	Database Administrator
DBMS	Database Management System
DBO	Database
DCE	Distributed Computing Environment (OSF)
DCF	Data Capture Facility
DCN	Document Change Notice
DCO	Document Change Order
DCR	Data Collection Request
DD	Data Dictionary
DDA	Data Delivery Acknowledgment
DDICT	Data Dictionary
DDIST	Data Distribution
DDL	Data Definition Language
DDN	Data Delivery Notice
DDSRV	Document Data Server
DDTS	Distributed Defect Tracking System
DEM	Digital Elevation Models
DES	Data Encryption Standard
DESKT	Desktop Configuration Item
DFA	Deleted From Archive Deletion From Archive
DID	Data Item Description
DIF	Data Interchange Formant
DIMGR	Distributed Information Manager
DLT	Digital Linear Tapes
DME	Distributed Management Environment

DMO	Data Management Organization
DNS	Domain Name Service
DOF	Distributed Object Framework
DOY	Day of Year
DOWS	Deployment of Open Geospatial Consortium (OGC) Web Services
DP	Data Pool
DPL	Data Pool
DPAD	Data Pool Action Dispatcher
DPASU	Data Pool Access Statistics Utility
DPIU	Data Pool Insert Utility
DPM	Data Pool Maintenance
DPREP	Data Preprocessing
DPR	Data Processing Request
DPS	Data Processing Subsystem
DR	Delivery Record
DS	Data Server
DSI	Database Server Interface7
DSS	Data Server Subsystem
e-mail	Electronic Mail
EBIS	EMD Baseline Information System
ECHO	EOS Clearing House
ECN	Equipment Control Number
ECS	EOSDIS Core System
EDF	ECS Development Facility
EDHS	ECS Data Handling System
EDS	Expedited Data Set
EGS	EOS Ground System
EIN	Equipment Identification Number
EMC	Enterprise Monitoring and Coordination
EMD	EOSDIS Maintenance and Development (Project)

EMSn	EOS Mission Support Network (formerly EBnet)
EOC	EOS Operations Center (ECS)
EOS	Earth Observing System
EOSDIS	Earth Observing System Data and Information System
EP	Evaluation Package
EROS	Earth Resources Observation System
ESD	Electrostatic Discharge
ESDIS	Earth Science Data and Information System (GSFC Code 505)
ESDT	Earth Science Data Type
ESOD	Earth Science On-line Directory
ET	Eastern (standard or daylight savings) Time
FDD	Flight Dynamics Division
FDDI	Fiber Distributed Data Interface
FIFO	First in First out
FORTRAN	FORMula TRANslation (computer language)
FOS	Flight Operations Segment (ECS)
FOT	Flight Operations Team
FSMS	File and Storage Management System
FTP	File Transfer Protocol
FTPD	File Transfer Protocol Daemon
GB	Gigabyte (10^9)
Gb	Gigabit (10^9)
GBps	Gigabytes per Second
Gbps	Gigabits per Second
GBAD	Ground Based Attitude Determination
GCDIS	Global Change Data and Information System
GCMD	Global Change Master Directory
GDS	Ground Data System
GeoTIFF	Georeferenced Tagged Image File Format
GES DAAC	GSFC Earth Sciences Distributed Active Archive Center

GFE	Government Furnished Equipment
GFP	Government Furnished Property
GID	Group IDs
GIGE	Gigabit Ethernet
GSFC	Goddard Space Flight Center
GUI	Graphical User Interface
H/W	Hardware
HDF	Hierarchical Data Format
HEG	HDF-EOS to GeoTIFF Conversion Tool
HIPPI	High Performance Parallel Interface
HPOV	HP Open View
HSM	Hierarchical Storage Management
HTML	Hypertext Mark-Up Language
HTTP	HyperText Transfer Protocol
HWCI	Hardware Configuration Item
I&AT	Integration and Acceptance Test
I&T	Integration and Test
I&TT	Integration and Test Team
IATO	Independent Acceptance Test Organization
ICD	Interface Control Document
ICLHW	Ingest Client Hardware [configuration item]
ILM	Inventory, Logistics, and Maintenance
ILP	Integrated Logistics Plan
ILS	Integrated Logistics Support
ILSMT	ILS Management Team
ILSO	ILS Office
INGST	Ingest Services
INS	Ingest System
IP	Internet Protocol
IQ	Intelligent Query and IQ Access

Ir1	Interim Release 1
ISDN	Integrated Services Digital Network
ISS	Internetworking Subsystem
ISQL	Interactive (Structured Query Language) SQL
IV&V	Independent Verification and Validation
JIL	Job Information Language
JPL	Jet Propulsion Laboratory (DAAC)
KB	Kilobyte (10^3)
Kb	Kilobit (10^3)
KBps	Kilobytes per Second
Kbps	Kilobits per Second
L0	Level 0
L0-L4	Level 0 (zero) through Level 4 (use Level-0 through Level-4 for EDHS search)
LAN	Local Area Network
LaRC	Langley Research Center (DAAC)
LCU	Library Control Unit
LIM	Local Information Manager
LIMGR	Local Information Manager
LMC	Local Maintenance
LMU	Library Management Unit
Loral	Loral Aerosys (ECS Team)
LP DAAC	Land Processes Distributed Active Archive Center
LRU	Line Replaceable Unit
LSM	Library Storage Module
LTM	Log Transfer Manager
LZPF	Level Zero Processing Facility
M	Million, mega (prefix)
M&O	Maintenance and Operations
MAN	Metropolitan Area Network
MB	Megabyte (10^6)

Mb	Megabit (10 ⁶)
MBps	Megabytes per Second
Mbps	Megabits per Second
MCF	Metadata Configuration File Metadata Control File
MD	Master Directory
MDA	Management Data Access
MDT	Mean Downtime
MHWCI	Management Hardware Configuration Item
MHz	Megahertz
MIB	Management Information Base
MIS	Management Information System
MM	Millimeter
MO&DSD	Mission Operations and Data Systems Directorate (GSFC Code 500)
MOU	Memorandum of Understanding
MR	Malfunction Report
MSEC	Millisecond
MSFC	Marshall Space Flight Center (DAAC)
MSS	Systems Management Subsystem
MTBCM	Mean Time Between Corrective Maintenance
MTBF	Mean Time Between Failure
MTBM	Mean Time Between Maintenance
MTBPM	Mean Time Between Preventive Maintenance
MTMGW	Machine-to-Machine Gateway
MTTR	Mean Time to Repair
MTTRes	Mean Time to Restore
MTU	Maximum Transfer Unit
MWO	Maintenance Work Order
N/A	Not Applicable
NA	Network Administrator

NASA	National Aeronautics and Space Administration
Nascom	NASA Communications
NBSRV	Spatial Subscription Server
NCC	Network Control Center (GSFC) network communication center
NCEP	National Centers for Environmental Prediction
NCR	Nonconformance Report
NCS	Netscape Commerce Server
NCSA	National Center for Supercomputer Applications
NMCI	Network Management Configuration Item
NNM	HP OpenView Network Node Manager
NOAA	National Oceanic and Atmospheric Administration
NPG	NASA Procedures and Guidelines
NSI	NASA Science Internet
NWCI	Networking Configuration Item
ODL	Object Description Language
OEM	Original Equipment Manufacturer
OGC	Open Geospatial Consortium
OI	Operator Interface
OJT	On-the-Job Training
OM	Order Manager
OPR	Operator
OPS	Operations Operations Supervisor
Ops Super	Operations Supervisor
ORPA	Operations Readiness & Performance Assurance
ORR	Operations Readiness Review
OS	Operating System
OSF	Open Software Foundation
OTS	Off the Shelf
OVW	HP OpenView Windows

OWS	Open Geospatial Consortium (OGC) Web Services
PAIP	Performance Assurance Implementation Plan
PB	Petabyte (10 ¹⁵)
PC	Personal Computer Process Control
PCF	Process Control File
PDL	Program Design Language
PDPS	Planning and Data Processing System
PDR	Product Delivery Record
PDS	Product Distribution System Production Data Set
PDSOI	Product Distribution System Operator Interface
PDSIS	Product Distribution System Interface Server
PGE	Product Generation Executable
PGS	Product Generation Service
PH	Production History
PI	Principal Investigator
PIN	Password Identification Number
PLANG	Production Planning CSCI
PLNHW	Planning Hardware [configuration item]
PLS	Planning Subsystem
PM	Preventative Maintenance
PMD	Physical Media Distribution
PMPDR	Physical Media Product Delivery Record
PPM	Principal Period of Maintenance
PR	Production Request (s)
PRE	Production Request Editor
PRS	Primary Replication Server
QA	Quality Assurance Quality Assessment
QAMUT	Quality Assessment Metadata Update Tool

QC	Quality Control
QRU	Query, Retrieve, and Update
R&M	Reliability and Maintainability
RAID	Redundant Array of Inexpensive Disks
RAM	Random Access Memory
RCL	Replication Command Language
RE	Responsible Engineer
RID	Review Item Discrepancy
RMA	Return Material Authorization
RMS	Resource Management Subsystem
RPC	Remote Procedure Call
RRS	Replicate Replication Server
RS	Replication Server
RSA	Replication System Administrator
RSM	Replication Server Manager
RSSD	Replication Server System Database
S/C	Spacecraft
S/W	Software
S/WCI	Software Configuration Item
SA	System Administrator
SATAN	Security Administrator Tool for Analyzing Networks
SCDO	Science and Communications Development Office (Now ECS Science Development Organization)
SCF	Science Computing Facility
SCID	Space Craft ID
SCSI	Small Computer System Interface
SDP	Science Data Processing
SDPF	Science Data Processing Facility
SDPS	Science Data Processing Segment (ECS)
SDPS/W	Science Data Production Software

SDPTK	Science Data Processing Toolkit
SDSRV	Science Data Server
SE	System Engineering
SE&I	System Engineering and Integration
SEI&T	System Engineering, Integration, and Test
SEPG	Software Engineering Process Group
SGI	Silicon Graphics Incorporated
SI&T	System Integration and Test
SIPS	Science Investigator-Led Processing Systems
SLA	Site License Agreement Software License Administrator
SMC	Systems Monitoring Center (a.k.a. System Monitoring and Coordination Center)
SMF	Status Message Facility
SMTP	Simple Mail Transport Protocol
SNMP	Simple Network Management Protocol
SOR	System Operations Review
SORR	Segment Operational Readiness Review
SPRHW	Science Processing Hardware [configuration item]
SQL	Structured Query Language
SQR	SQL Report Writer
SQS	Spatial Query Server
SRR	System Requirements Review
SSAP	Science Software Archive Package
SSH	Secure Shell
SSI&T	Science Software Integration and Test
SSL	Secure Socket Layer
SSS	Spatial Subscription Server Secure Shell Setup
STK	Storage Tek
STMGT	Storage Management
SubsMgr	Subscription Manager

SUBSRV	Subscription Server
T&M	Time and Materials
TB	Terabyte (10 ¹²)
TBC	To Be Confirmed
TBD	To Be Determined
TBR	To Be Resolved
TBS	To Be Supplied
Tbyte	Terabyte
TCP/IP	Transmission Control Protocol/Internet Protocol
TEC	Tivoli Enterprise Console
telecon	Telephone Conference
TELNET	Telecommunication Network
TRMM	Tropical Rainfall Measurement Mission
TSDIS	TRMM Science Data and Information System
TT	Trouble Ticket
UDP	User Datagram Protocol
UID	User IDs
UR	Universal Reference
URDB	User Recommendations Database
URL	Universal Resource Locator
USO	User Support Office
US Rep	User Services Representative
UWG	User Working Group
VDD	Version Description Document
VOB	Versioned Object Base (ClearCase)
WAIS	Wide Area Information Server
WAN	Wide Area Network
WCS	Web Coverage Service
WKBCH	Workbench
WKSHCI	Working Storage Hardware Configuration Item

WMS	Web Mapping Service
WWW	World Wide Web
XLV	Logical Volume Disk Driver