



**LABORATORY ELECTRONIC DATA
INTERCHANGE (LEDI)
PATCH LA*5.2*27 AND PATCH LR*5.2*153
INSTALLATION GUIDE**

(Revised 12/04/1997)

Version 5.2

September 1997

Department of Veterans Affairs
Veterans Health Administration
Office of Chief Information Officer

Preface

The Veterans Health Information Systems and Architecture (**VISTA**) Laboratory Electronic Data Interchange (LEDI) Patch LA*5.2*27 and Patch LR*5.2*153 Installation Guide Version 5.2 provides the Department of Veterans Affairs Medical Center (DVAMC) Information Resource Management (IRM) staff, Laboratory Information Manager (LIM), and other DVAMC users with a straightforward means for installing and implementing the LEDI software.

The LEDI Patch LA*5.2*27 and Patch LR*5.2*153 Installation Guide focuses on easy-to-follow step-by-step instructions. This document consists of the following sections:

Security Information: This section lists the mail groups, alerts, security keys, special VA FileMan access codes, and other security measures included in the LEDI software release.

Pre-Implementation Information: This section lists the requirements that **must** be performed prior to installing the software.

LEDI Installation Instructions: This section contains the LEDI installation instruction including detailed examples of the actual installation process.

LEDI Implementation Setup: This section provides all the necessary instructions required for the IRM and LIM staff to implement the LEDI software after the installation process is completed.

Glossary: This section contains the glossary of terms that are related to the LEDI software application.

Appendix: The appendix section contains tables, examples, and other references that may be helpful with the implementation of the LEDI software application.

Acknowledgments

The **VISTA** Laboratory Electronic Data Interchange (LEDI) software application is the result of extensive development, design, and testing done by a dedicated group of Chief Information Office Field Office (CIOFO) and VAMC employees. The LEDI Development Team acknowledges the following persons who were instrumental in testing and refining the LEDI software:

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Dedication



This manual is dedicated posthumously in recognition of her outstanding contributions to the Veterans Health Information Systems and Architecture (VISTA) Laboratory program. She is recognized for her outstanding efforts and accomplishments as an Expert Panel member and Laboratory Information Manager for the Pathology and Laboratory Medicine Service.

Her many contributions have greatly enhanced the quality of the VISTA Laboratory software application and gained her, the lasting respect and admiration of her colleagues.

July 1997

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Introduction

Purpose

The Veteran Integrated Service Network (VISN) requires the modification of existing **VISTA** Laboratory V. 5.2 software to support electronic lab test ordering and lab test result reporting for VA medical care facilities laboratories (i.e., VA outpatient medical care facilities within a VISN, between VISNs, and with non-VA organizations such as commercial reference laboratories).

The **VISTA** Laboratory V. 5.2 software application has undergone significant changes in the focus and utilization to support the changes in VISN health care services. The enhanced **VISTA** Laboratory V. 5.2 software will provide the VA outpatient medical care facilities laboratories with the capabilities for consolidating lab test ordering and lab test results reporting between facilities without diminishing quality of services in patient medical care. To accomplish this mission the Laboratory Electronic Data Interchange (LEDI) Patch LA*5.2*27 and Patch LR*5.2*153 software were developed.

The LEDI software provides electronic messaging of lab test ordering and results reporting between Veterans Affairs (VA) outpatient facilities based on the Health Level Seven (HL7) Version 2.3 Standard and **VISTA** Health Level Seven (HL7) Version 1.6 Standard Specifications documents. These standard specifications are used as the basis for defining the **VISTA** Laboratory Universal Interface (UI) and Laboratory Electronic Data Interchange (LEDI) Health Level Seven (HL7) Interface Standard Specifications Version 1.1 document.

Enhancements

The following features and functionality are provided by the LEDI software enhancement for the Laboratory V. 5.2 and Automated Instrument (AI) software applications.

- Laboratory Electronic Data Interchange (LEDI) - Electronic Messaging
- Electronic Laboratory Test Ordering
- Bar-code Specimen Accessioning
- Electronic Laboratory Test Results Reporting
- Workload
- Charge Back System

• Patch LR*5.2*153 **VISTA BLOOD BANK SOFTWARE** Version 5.2
DEVICE PRODUCT LABELING STATEMENT

September 22, 1997

VISTA Laboratory Software Package patch LR*5.2*153 contains changes to software controlled by VHA DIRECTIVE 97-033, titled **VISTA BLOOD BANK SOFTWARE** Version 5.2. Changes include:

- 1) New fields in LABORATORY TEST file (#60), LAB DATA file (#63), and ACCESSION file (#68) which are common laboratory utility files used by Blood Bank software.
- 2) Routine LRUPT which is used by the option Show list of accessions for a patient [LRUPT] has been enhanced to display the UID for an accession.

These two changes have been reviewed by the **VISTA** Blood Bank Developer and found to have no impact on the **VISTA BLOOD BANK SOFTWARE V. 5.2** control functions.

PROBLEM: Patch LR*5.2*153 creates new fields in LABORATORY TEST file (#60), LAB DATA file (#63), and ACCESSION file (#68) in order to accommodate electronic transfer of laboratory results from one hospital site to another. In addition the routine LRUPT is modified to display the Universal ID along with other specimen accession information.

RISK ANALYSIS: Changes made by patch LR*5.2*153 have no effect on Blood Bank software functionality, therefore RISK is none.

EFFECT ON BLOOD BANK FUNCTIONAL REQUIREMENTS: Patch LR*5.2*153 does not alter or modify any software design safeguards or safety critical elements functions.

POTENTIAL IMPACT ON SITES: This patch contains changes to files and routines identified in Veterans Health Administration (VHA) Directive 97-033. The changes have no effect in Blood Bank functionality or medical device control functions. There is no adverse potential to sites.

VALIDATION REQUIREMENTS BY OPTION: There are no required validation scenarios to be completed by sites after installing this patch.

Patient Lookup

The new Patient Lookup functionality relieves accessioning personnel from manually entering patient's demographics. The lookup starts to check the PATIENT file (#2), moves to the VAMC NETWORK PATIENT file (#537010), and lastly to check the REFERRAL PATIENT file (#67). This functionality will reduce or eliminate typographical mistakes and decreases the possibility of duplicates. The Patient demographics displays the following fields:

⇒ Full Name

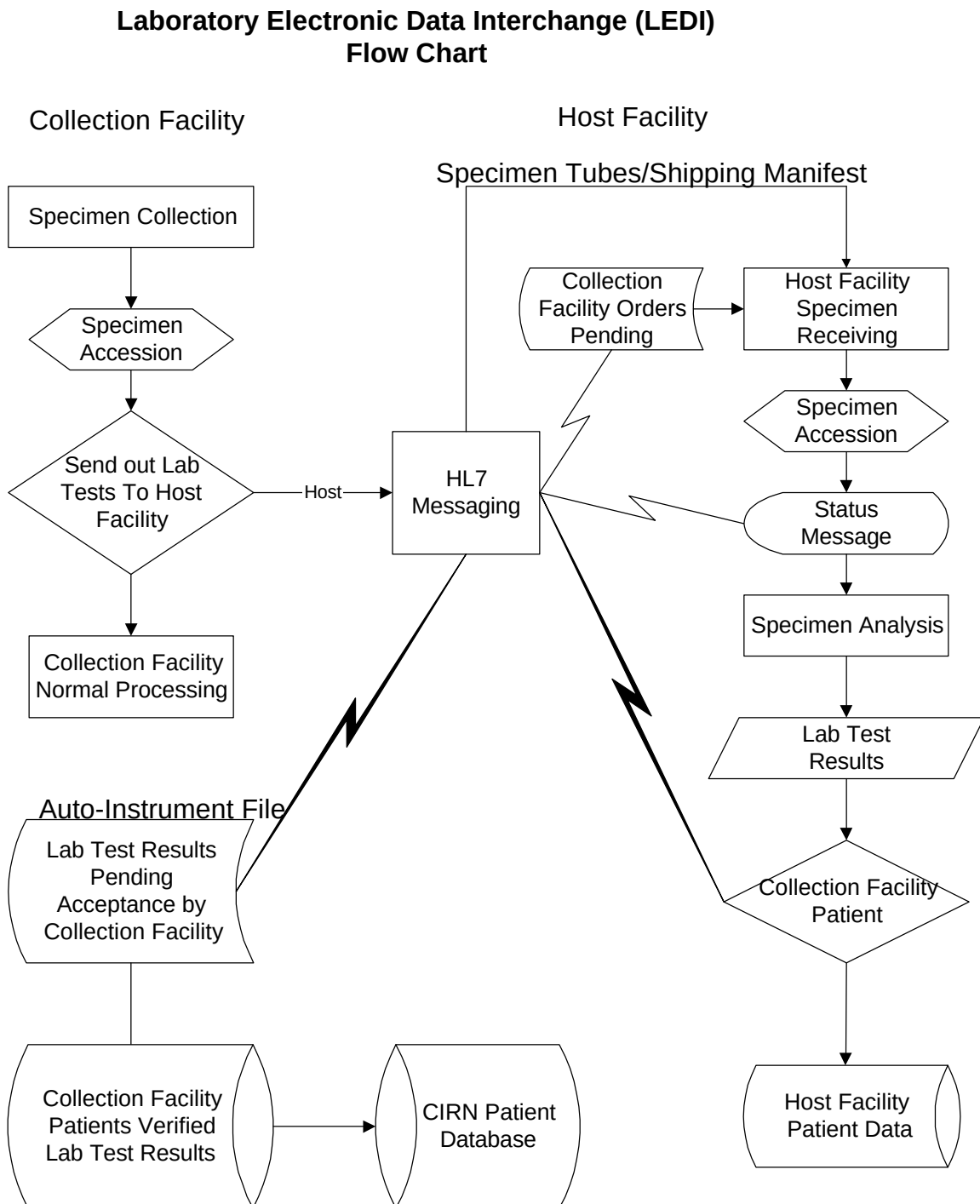
⇒ Date of birth (DOB)

⇒ Patient Identification (SSN)

⇒ Sex



Flow Chart



LEDI Installation Guide Notations

This section defines the symbols and computer screen dialogue used through out the LEDI Installation Guide. The documentation distributions are also included in this section.

Computer Dialogue

The computer dialogue appears in Courier font, no larger than 10 points.

Example: Courier font 10 points

User Response

User entry response appears in boldface type Courier font, no larger than 10 points.

Example: Boldface type

Return Symbol

User response to computer dialogue is followed by the <RET> symbol which appears in Courier font, no larger than 10 points, and bolded.

Example: <RET>

Tab Symbol

User response to computer dialogue is followed by the <Tab> symbol which appears in Courier font, no larger than 10 points, and bolded.

Example: <Tab>

Brackets Symbol

The bracket symbols [] are used for notations within the computer screen dialogue.

Example: []

LEDI Installation Guide Distributions

The LEDI Installation Guide is distributed in two formats (hard copy and electronic distribution). This installation guide may be obtained via the following distributions:

Electronic Distributions:

Intranet

The LEDI Installation Guide is available in Portable Document Format (PDF) and Hyper Text Markup Language (HTML) on the Intranet at the following address:
http://152.127.1.95

Anonymous Software Accounts

The LEDI Patch LA*5.2*27 and Patch LR*5.2*153 Installation Guide is available in PDF on the ANONYMOUS.SOFTWARE accounts at Albany, Hines, and Salt Lake City Chief Information Office Field Offices (CIOFOs).

CIOFO	FTP Address
Albany	152.127.1.5 - anonymous.software
Hines	152.129.1.110 - anonymous.software
Salt Lake City	152.131.2.1 - anonymous.software

Hard Copy

The LEDI Patch LA*5.2*27 and Patch LR*5.2*153 Installation Guide hard copies are distributed to all VA Medical Centers by the National Center for Documentation (NCD).

Security Information

The Security Information sections list the security features for the LEDI software application. This section contains security information regarding special VA FileMan access codes, security keys, mail groups, alerts, and other security features included in the LEDI software release.

Contingency Planning

Each facility using the LEDI software application **must** develop a local contingency plan to be used in the event of application problems in a live environment. The facility contingency plan **must** identify the procedure for maintaining functionality provided by the LEDI software application in the event of a system outage.

File Security

The LEDI software application enhancement does not modify any existing file security schemes. New files exported by the LEDI software installation have no file security applied. However, VA FileMan security access LI codes are recommended if file security is deemed necessary by the facilities.

Electronic Signatures

There are no electronic signatures utilized in the LEDI software application.

Purging

The LEDI software application purging capabilities are provided through the Universal Interface (UI) software. The Lab Messaging Nightly Cleanup [LA7TASK NIGHTY] option is used to purge messages in the LA7 MESSAGE QUEUE file (#62.49) when the messages become eligible for purging. This option **must** be scheduled to run daily, preferably during a period when activity in the Lab Messaging (i.e., UI and LEDI software) is at a minimum. See the Lab Messaging Nightly Cleanup [LA7TASK NIGHTY] option description for additional information and functionality.

Purging of messages for each configuration can be set in the LA7 MESSAGE PARAMETER file (#62.48) using the Grace Period For Messages field (#3). The Default value is 3 days.

Instrument Interfacing

LEDI is an enhancement to Laboratory V. 5.2 and does not specifically involve instrument interfacing. All electronic communication is via established HL7 procedures for transmitting messages. The **VISTA** Laboratory HL7 Interface Standards have been enhanced to accommodate expanded messaging capability.

Security Keys

LRDATA key: This security key is used to identify personnel that are allowed to edit or change results that were done by another outside laboratory. If the results were **not** generated by an associated division, this security key is required to change the results. Manual editing of the Host laboratory results is not the first option. **Note:** The laboratory responsible for the original results should send and edit the LEDI messages to correct errors. This may not be possible in all cases requiring this manual edit feature.

LRLEDI key: This security key is used to identify users that are charged with the setup and configuration of LEDI software functionality. In most cases, the LRLIASON key holder would qualify to also hold this key. LEDI setup options are exported with this security key assigned.

Remote Systems

Remote systems are defined as any computer system sending to and receiving HL7 messages from the Host laboratory computer system. In VA to VA configurations, connectivity to remote system does not involve another system. In the case of non-VA computer systems, connection to remote systems is done via Generic Instrument Manager (GIM). The GIM is the remote system, not the non-VA computer system.

The **VISTA** Laboratory Electronic Data Interchange (LEDI) software uses the HL7 V. 2.3 Standard and the **VISTA** HL7 V. 1.6 software to transmit and receive HL7 messages via MailMan or Transmission Control Protocol/Internet Protocol (TCP/IP). The software transmits unsolicited order and result messages and receives acknowledgments back confirming or opposing the proper delivery of the messages. One order message is transmitted for every manifest or lab delivery to a remote facility system. One result message is sent to each facility per verifying session. To reduce the turn around time and network mail traffic, the recommended method of message delivery is TCP/IP.

Mail Groups

The Laboratory Electronic Data Interchange (LEDI) software uses either MailMan or TCP/IP as the medium to transmit and receive data from remote systems. The MailMan interface uses the HL LOWER LEVEL PROTOCOL PARAMETER file (#869.2), Mail Group field (#100.01) for transmitting outbound messages.

The Laboratory Electronic Data Interchange (LEDI) software includes mail groups. It is highly recommended that the facilities designate a local mail group for receiving the new LEDI alerts.

LAB MESSAGING Mail Group

This is a general mail group, which is used by the LAB MESSAGING package to address alerts when conditions are detected requiring review and/or corrective action. The members of this mail group should, at the minimum, include the LIM and selected Lab and IRM personnel responsible for maintenance and support of the LAB MESSAGING software.

The software utilizes several Kernel Alerts. These Alerts are triggered and sent to members of the LAB MESSAGING mail group for the following conditions:

- When the scheduled tasked Lab Messaging Nightly Cleanup [LA7TASK NIGHTY] option or the Start/Stop Auto Download Background Job [LA7 ADL START/STOP] option is run and more than 500 entries are found scheduled for downloading via the Lab Universal Interface an alert is sent notifying members of this condition.
- When the scheduled tasked Lab Messaging Nightly Cleanup [LA7TASK NIGHTY] option or the Lab Messaging File Integrity Checker [LA7 CHECK FILES] option is run and LA7 MESSAGE QUEUE file (#62.49) is found to have bad entries and/or cross-references. An alert is sent notifying members of this condition.

LA7V Mail Group

The LA7V (station number) mail group is used by the HL LOGICAL LINK file (#870) for transmitting Lab data to the site. This mail group is created by the LEDI Setup [LA7V SETUP] option using the LA7V name space concatenated with the receiving facilities primary station number.

Local Mail Group

It is highly recommended that the facilities designate a local mail group for receiving the “New Results alert” and the “Error alert” associated with the LEDI software application.

Alerts

The LEDI software uses the LA7 MESSAGE PARAMETER file (#62.48) for sending alerts to the mail group specified in the Alert Condition subfile (#68.481). The facility should designate a local mail group to use for notification of the alerts.

There are two types of alerts that can be turned on for each configuration:

1. New results alert - notifies members when the Lab Universal Interface software has processed an HL7 message containing test results.

2. Error alert - notifies members during the processing when a Laboratory Universal Interface message error condition has occurred.

References

The following references may be helpful when installing and implementing the LEDI software application.

- Kernel Systems Manual V. 8.0
- Kernel Toolkit V. 7.3
- Laboratory Universal Interface Patch LA*5.2*17-Patch LR*5.2*65 V. 1.0
- VA FileMan V. 21.0
- VA MailMan V. 7.1
- **VISTA** Health Level Seven (HL7) V. 1.6
- **VISTA** Laboratory Universal Interface (UI) and (LEDI) Health Level Seven (HL7) Interface Standard Specifications V. 1.1

- Health Level Seven Standard Version 2.3 © 1997 by the Health Level Seven, Inc.
For hard copies of the HL7 V. 2.3 Standard please contact:
Health Level Seven
3300 Washtenaw Avenue, Suite 227
Ann Arbor, MI 48104
Phone: 313-677-7777
Fax: 313-677-6622
HQ@HL7.org

Pre-Implementation Information

The pre-implementation information section establishes specific requirements that **must** be accomplished before installing LEDI Patch LA*5.2*27 and Patch LR*5.2*153.

Staffing Requirements

Laboratory Information Manager

The Collection and Host facilities IRM and LIM staff **must** coordinate the LEDI Implementation Setup once the software has been installed. The LEDI Implementation Setup **must** be performed in sequences by the IRM and LIM staff.

Information Resource Management Staff

The LEDI software requires an experienced IRM staff for installing patches, setting mail groups, and menu assignments. The Collection and Host facilities IRM and LIM staff **must** coordinate the LEDI Implementation Setup once the software has been installed. The LEDI Implementation Setup **must** be performed in sequences by the IRM and LIM staff.

Hardware Platform

The **VISTA** LEDI software application operates on the current VA computer hardware systems.

LEDI Equipment Requirements

To realize the maximum benefit of the LEDI software application functionality bar code printers, bar code accession labels, and scanners are required for accessioning patient's specimen. The manual accessioning method is intended to be used as a backup procedure for accessioning patient's specimen. Using the manual accessioning method will result in significant risk of transcription errors and increased accessioning time.

Collection Facility Equipment Requirements:

1. Laser quality printer capable of supporting Hewlett Packard PC Language Version 3 or higher for printing Shipping Manifest bar code 128 symbology.
2. Accession label laser bar code printer, download programmable, full featured, capable of multiple formats, multi-font, 360 degree print orientation, supports Code 39, Code 39 full American Standard Code for Information Interchange (ASCII), Code 128, Interleaved 2 of 5, Codabar, UCC/EAN 128, PDF417.

Comparable Items:

These items are only for comparison of features and price.

Any vendor's equipment meeting the specifications is acceptable.

- [HP LaserJet 5p/Kyocera laser printers F-Series] Shipping manifest printer
- [Intermec 4100] Specimen Accession bar coded labels

Host Facility Equipment Requirements:

Scanner guns are recommended because future development will provide 2 dimensional bar codes shipping manifest. Experience has been much more favorable with scanner guns compared to wands or pens.

1. Bar code laser scanner gun, 1D/2D, sealed housing, RS 232 CRT connecting cable, 5 foot cable length, auto discriminating, Raster scanning scan element, Retro-collective, optical resolution at least 6.6 mil (0.17) mm, immune to fluorescent lighting. Auto-Decodes following symbologies: Code 39, Code 39 full ASCII, Code 128, Interleaved 2 of 5, Codabar, UCC/EAN 128, PDF417, and 1 and 2 dimensional bar code.
2. Hands free stand for the Laser Gun
3. Appropriate power supply for scanner gun

Comparable items:

These items are only for comparison of features and price.

Any vendor's equipment meeting the specifications is acceptable.

Scanners generally are attached to a Cathode Ray Tube (CRT) used in the central specimen accessioning area. Match the scanner to your particular CRT/keyboard configuration. If you are using Personal Computers (PCs) instead of CRT dumb terminals, these configuration usually require different cables and wedges. When ordering consult the vendor and describe your configuration.

These ordering numbers will not be the same for all configurations.

- Symbol 4800 2D/1D Scanner System LS4804-I00A
- Power Supply 120v 50-14000-008STI40-0200
- Dual port Synapse RS232 Cable (sometime termed a wedge)
- Intellistand 20-13906-01

Backup Routines

It is highly recommended that a full system backup be performed before installing the LEDI software. A number of new files and numerous data dictionary changes are done by the install.

Disk Space

Disk space is difficult to predict and the amount of space depends to what extent new features are used. Because of the new requirement to journal the ^LAHM global, there will be an immediate increase in journal disk space. If none of the LEDI messaging features are implemented a 5-15% increase in disk space can be expected in the ^LR and ^LRO globals. If MailMan is used as the HL7 messaging protocol the ^XMB global will experience increased growth. Depending on the LEDI messaging activity and the number of trading partners, one could expect 20-40% disk space increase overall.

Performance/Capacity Impact

Performance estimates and capacity measure are difficult to obtain. LEDI software has components in several applications. It is estimated that LAB Service, LAB MESSAGING, and AUTOMATED LAB INSTRUMENTS applications will impact the system by requiring 5-12% more Central Processing Unit (CPU) cycles.

Kernel Installation and Distribution System (KIDS)

The LEDI software distribution is using the Kernel Installation and Distribution System (KIDS). KIDS is a new method of installing **VISTA** software and a new module in Kernel V. 8.0. For further instructions on using KIDS please refer to the Kernel V. 8.0 Systems Manual.

Health Level Seven (HL7)

The LEDI software application is using the **VISTA** HL7 V. 1.6 software to transport the data. The LEDI application will be sending lab orders (ORM) and lab results (ORU) messages via MailMan or TCP/IP.

^VASITE

The ^VASITE call is used to determine the Collection facilities institution number. This information is needed and used to establish clear and concise linking entries in the following files; HL APPLICATION PARAMETER file (#771), HL LOGICAL LINK file (#870), HL LOWER LEVEL PROTOCOL PARAMETER file (#869.2), AUTO INSTRUMENT file (#62.4), and LA7 MESSAGE PARAMETER file (#62.48) at both the Collection and Host facility laboratories databases.

Test Account

It is highly recommended that the LEDI software is installed into a test account before installing into a live production account. The test and production accounts **must** include all required software versions and patches to ensure a successful test installation of the LEDI Patch LA*5.2*27 and Patch LR*5.2*153.

Test Sites

This chart displays the VAMC facilities that assisted in testing the LEDI software prior to the software release date.

VAMC Test Site	Hardware Platform
Milwaukee, WI	DEC Alpha/DSM
Brockton, MA	DEC Alpha/DSM
Bedford, MA	DEC Alpha/DSM
Hines, IL	DEC Alpha/DSM
Chicago Westside/Lakeside, IL	DEC Alpha/DSM
Long Beach, CA	DEC Alpha/DSM
Loma Linda, CA	DEC Alpha/DSM
Madison, WI	DEC Alpha/DSM
Tomah, WI	Open M
Northampton, MA	DEC Alpha NT
White River Junction, VT	DEC Alpha NT
Iron Mountain, MI	Open M
Bath, NY	Open M

(Revised 12/4/97)

Database Integration Agreements (DBIAs)

Listed are the DBIAs that are required for the LEDI software application. You may use the DBA menu [DBA] on Forum to obtain detailed information regarding these DBIAs.

DBIA10136	DBIA1495-B
DBIA1169-B	DBIA2049
DBIA1170	DBIA2061
DBIA1495-A	DBIA2064

Namespace

The LEDI software is using the LA7 and LR namespaces.

Nightly Task

The Lab Messaging Nightly Cleanup [LA7TASK NIGHTY] option **must** be scheduled to run on a daily basis. This option is used to purge the data in the LA7 MESSAGE QUEUE file (#62.49). Please review the Appendix section for the Lab Messaging Nightly Cleanup [LA7TASK NIGHTY] option description and scheduling information.

Menus and Options

Please reference the Appendix section of the LEDI Installation Guide for detailed descriptions of all new menus, options, and modified options created for the LEDI software application.

VISTA Software Requirements

Packages	Versions (or Greater)
VA FileMan	21.0 (with all patches installed)
Kernel	8.0 (with all patches installed)
Laboratory	5.2 (with all patches installed)
MAS/PIMS	5.3 (with all patches installed)
HL7	1.6 (with all patches installed)
VA MailMan	7.1 (with all patches installed)

Required Patches

Prior to the installation of the LEDI software, the following patches **MUST** be installed:

Package Name	Patches
Kernel V. 8.0	XU*8.0*36
Kernel V. 8.0	XU*8*44
Health Level Seven V. 1.6	HL*1.6*19 (optional for TCP/IP)
Lab Messaging V. 5.2	LA*5.2*17
Lab Messaging V. 5.2	LA*5.2*23
Lab Messaging V. 5.2	LA*5.2*25
Lab Service V. 5.2	LR*5.2*65
Lab Service V. 5.2	LR*5.2*121
Lab Service V. 5.2	LR*5.2*128
Lab Service V. 5.2	LR*5.2*140
Lab Service V. 5.2	LR*5.2*171

(Revised 12/4/97)

LEDI Routines

New LA Routines

Routines	Descriptions
LA27	Installation routine for patch LA*5.2*27.
LA7CHKF	Integrity check routine for Lab Messaging.
LA7CHKFP	Prints Lab Messaging Integrity Check Report.
LA7PURGE	Purge Lab Messaging Interface Messages.
LA7SBC	Prints Code128 barcode on HP PCL compatible laser printer.
LA7SBCR	Performs various barcode reader functions.
LA7SBCR1	Read/process patient information barcode.
LA7SBCR2	Read/process site information barcode.
LA7SBCR3	Read/process specimen information barcode.
LA7SCE	Edits Lab Shipping files.
LA7SM	Add/Remove Test, Close/Ship a shipping manifest.
LA7SM1	Retransmits a shipping manifest.
LA7SMB	Builds tests onto a shipping manifest.
LA7SMP	Prints a shipping manifest.
LA7SMPXL	Reprints a shipping manifest from host's sites LAB PENDING ORDERS file.
LA7SMU	Shipping manifest utility routine.
LA7SMU1	Shipping manifest utility routine (continued).
LA7SSR	Displays test order status.
LA7SUTL	Utility routine, which performs various functions, used by Lab Shipping routines.
LA7UXQA	Utility routine to send/process alerts within LAB MESSAGING package.
LA7VHL	Main Driver for incoming HL7 V. 1.6 messages.
LA7VLL	Setup HL7 V. 1.6 Logical Link for Consolidation.
LA7VMSG	LAB ORU (Observation Result) message builder.
LA7VORM	LAB ORM (Order) message PROCESSOR.
LA7VORM1	LAB ORM (Order) message builder.
LA7VORR1	LAB ORM (Order Response) message builder.
LA7VORU	Builder of HL7 Lab Results OBR/OBX/NTE.
LA7VSET	Menu To Setup VISN Labs.
LA7VSET1	Continuation of LA7VSET.
LA7VSTP	HL7 Environment setup routine.
LA7VSTP1	Continuation from LA7VSTP.

(Revised 12/4/97)

New LR Routines

Routines	Descriptions
LR153	Pre-Install routine
LR7OU64	Link NLT codes
LR7OU641	Link NLT codes
LRCAPD2	Display workload
LRDPAREF	Patient lookup
LRDPAREX	Patient lookup
LREVENT	Shipping Event X-Ref Utility
LRMSTUF1	MASS DATA ENTRY INTO FILE 63.04
LRMSTUF2	MASS DATA ENTRY INTO FILE 63.04
LRORDB	LEDI Accessioning
LROU641	Link NLT code
LRPEND	Update LAB PENDING ORDERS ENTRY file (#69.6)
LRTOCOST	Print cost report
LRTT5	LEDI workload reports
LRTT5P1	LEDI workload reports
LRTT5R1	LEDI workload reports
LRVERA	Read Accession/UID
LRVRA	Accession/UID lookup

(Revised 12/4/97)

LEDI Files

Listed below are the new files and descriptions created for the LEDI Software application:

New Files	Descriptions
LAB SHIPPING MANIFEST file (#62.8)	This file holds the information that describes and controls the specimens that make up the shipment of specimens to another facility.
LAB SHIPPING EVENT file (#62.85)	This file records changes made to a shipping manifest. It is used to track the “who, what, when” of events that occur to a shipping manifest and the test specimens that are on the manifest. It will record when a shipping manifest is created, built, closed and shipped. It will also record when test specimens are added, removed, shipped, received and completed. The user and the date/time of the event and entry are also recorded.
LAB SHIPPING CONFIGURATION file (#62.9)	This file is used to define the two members (institutions) that have a relationship. This file is used to group the Collection and Host facilities and describe particulars of their relationship. Examples are what specimen id is used, what types of tests/specimens are shipped, who is the collection and host facility. Are the facilities linked electronically? Are they on the same computer system?
LAB SHIPPING CONTAINER file (#62.91)	This file contains the type of containers that the lab uses to ship lab specimens. There are two types of containers. Specimen containers hold the specimen and packaging containers are used to contain the specimen containers. Presently when adding entries to this file they will be classified according to types (i.e., Primary - the specimen is shipped in the original collection container, Aliquot - the specimen transferred to a tube/jar before shipment, and Packaging - container used to hold specimen containers).

Continued LEDI Files

New Files	Descriptions
LAB SHIPPING METHOD file (#62.92)	This file contains the transport method used to ship the specimens (i.e., Courier, Taxi, FEDEX, UPS, etc.).
LAB SHIPPING CONDITIONS file (#62.93)	This file contains entries which describe the conditions under which a shipment is transported (i.e., Ambient temperature, Frozen, Refrigerated, etc.).
LAB ELECTRONIC CODES file (#64.061)	LAB ELECTRONIC CODES file (#64.061) contains a collection of codes used in electronic messaging. Some of these codes originated in established recognized sources (i.e., HL7 tables). Other codes are unique to the laboratory package needs or requirements. This file is a standard file for many types of terms used in electronic messaging.
LAB PENDING ORDERS ENTRY file (#69.6)	LAB ORDERS PENDING ENTRY file (#69.6) serves as a temporary storage locations for electronic laboratory test orders. LEDI software populates and manages the contents of this file. Electronic test orders from VA Collection sites are stored in this file until ordered test results have been returned. Electronic orders are matched with physically shipped specimen during accessioning process. Specimen processing status update information is also stored in this file to assist in the management of workload. When the results have been stored in the Collection facility's patient clinical record, entries will be purged from this file. NOTE: The user SHOULD NOT directly edit this file via VA FileMan. Appropriate options are provided to manage the data in this file.

Existing Files With New Fields

Listed below are existing **VISTA** files that required new fields to accommodate the LEDI software application:

Existing Files	New Fields
PATIENT file (#2)	Lab Referral Ref field (#67): This new field contains the pointer reference to the REFERRAL PATIENT file (#67) of the Laboratory package. This field is set by the laboratory accessioning software and should not be edited. Changing of this pointer will result IN misidentification of patients which could have dire medical repercussions.
LABORATORY TEST file (#60)	Result NLT Code field (#64.1): This is the workload procedure code associated with this test. It is used in compiling laboratory workload statistics.
	Catalog Item field (#64.2): This field is used to indicate that this entry is to be included in the Electronic Catalog.
TOPOGRAPHY file (#61)	LEDI HL7 field (61.09): This field contains the HL7 standard specimen type code.
URGENCY file (#62.05)	HL7 Code field (#3): This is the corresponding Health Level Seven (HL7) Table of Priority entry that most closely matches the VISTA Lab urgency. This field will be used in HL7 messages to describe the laboratory test urgency.
	LEDI HL7 field (#4): This field is used to map a local urgency to a standard entry in the LAB ELECTRONIC CODES file (#64.061) for the purpose of creating HL7 message segments.
ACCESSION TEST GROUP file (#62.6)	DISPLAY ORDER (#.05): This field determines if test numbers on list are numbered "CONTINUOUS", starting at 1,2,3,. or by "INTERNAL NUMBER" when the test list is displayed. "INTERNAL NUMBER" will assign the test number on list based on the internal entry number (field #.001 NUMBER) of test in the "TEST" multiple.

Existing Files	New Fields
continued	This will print the list with gaps if tests have been removed. It allows removal of tests without subsequent tests being renumbered on the list and tests being added at designated positions. This may assist site when modifying test lists and users have memorized existing number of tests, by maintaining existing number.
LAB DATA file (#63) CHEM, HEM, TOX, RIA, SER, etc. subfile (#63.04)	UID field (#.31): This is the unique identifier (UID) for this specimen.
	ORDERING SITE field (#.32): This is the site ordering the test.
	Collecting Site field (#.33): This is the site where the specimen was collected.
	Host UID field (#.34): This is the unique identifier for this specimen at the facility performing the test.
	Ordering Site UID field (#.342): This subfile contains the unique identifier (UID) at the site ordering the test.
ORDERED TEST subfile (#63.07)	Ordered Test subfile (#63.07): This subfile contains the ordered test NLT code requested by the clinical provider. If this test is a panel, all atomic tests within the panel will be associated with the ordered test using this National Lab Test (NLT) codes.
REFERRAL PATIENT file (#67)	Patient File Ref field (#2): This field contains the pointer to the PATIENT file (#2) and is used to obtain patient's demographics. LEDI accessioning software attempts to find a match in the PATIENT file (#2) using the Patient Identification (PID) Social Security Number (SSN). If a match is found, the patient's demographic information is copied into the REFERRAL PATIENT file (#67), Name field (#.01), Identifier field (#.09), DOB field (#.03), and Sex field (#.02). The pointer entry stored in the field is used in future lookups for data validation.

Existing Files	New Fields
continued	NHE File Ref field (#2.2): This field contains the pointer to the VAMC NETWORK PATIENT file (#537010) used to obtain the patient's demographics. LEDI accessioning software attempts to find a match in the File #537010 using the PID (SSN). If a match is found, the patient's demographic information is copied into the REFERRAL PATIENT file (#67), Name field (#.01), Identifier field (#.09), and DOB field (#.03). The pointer entry stored in this field is used in future lookups for data validation.
	Patient Name field (#3): This field controls the sequence used to lookup patients demographic information already stored in either ^DPT(^AFJ(537010 or the ^LRT(files 67. This field is used by LEDI patient accessioning software.
ACCESSION file (#68) DATE subfile (#68.01) ACCESSION NUMBER subfile (#68.02)	UID field (#16): This is the UID used by the Host LEDI system for this order/accession.
	Ordering Site field (#16.1): This field contains the pointer to the INSTITUTION file (#4) for the MailMan domain location of the computer system. All LEDI results are returned to the Ordering computer system. Location to send LEDI HL7 result messages. This field is used by the LEDI software.
	Collecting Site field (#16.2): This field contains the pointer to the INSTITUTION file (#4) for the actual collection site. The ordering site is the MailMan location of the computer system. MailMan domain location and the collection facility may be different. This field is used by the LEDI software.

Existing Files	New Fields
continued	Host UID field (#16.3): Each Order/Accession is given a Host UID. The UID is stored in this location. If LEDI software is used to accession specimens, usually the collecting sites UID is used to track specimens. If the collecting sites UID conflict is the Host system number sequence, the HOST UID will be used instead of the collection facility's UID. This field is used by the LEDI software.
	Ordering Site UID field (#16.4): This field contains the collecting sites UID for this specimen. This field is used by the LEDI software.
DATE subfile (#68.01) ACCESSION NUMBER subfile (#68.02) TESTS subfile (#68.04)	Parent Test field (#8.1): This field contains the parent ordered test. In the case of panel test, this field will contain the original ordered test.
DATE subfile (#68.01) ACCESSION NUMBER subfile (#68.02) TESTS subfile (#68.04)	Shipping Manifest field (#9): This fields is used at the collection facility to determine the exact placement of each test. This field will contain the shipping manifest code for referral or send out lab tests. For all local tests this field will be null.
LAB ORDER ENTRY file (#69) SPECIMEN subfile (#69.01) TEST subfile (#69.03)	UID field (#13): This is the UID used by the HOST LEDI system for this order/accession. This field is used by the LEDI software.
	Ordering Site field (#14): This field contains the pointer to the INSTITUTION file (#4) for the MailMan domain location of the computer system. All LEDI results are returned to the Ordering computer system. Location to send LEDI HL7 result messages. This field is used by the LEDI software.

Existing Files	New Fields
continued	Collecting Site field (#15): This field contain the pointer to the INSTITUTION file (#4) or the actual collection facility. The ordering facility is the MailMan location of the computer system. MailMan domain location and the collection facility may be different. This field is used by the LEDI software.
	HOST UID field (#16): Each Order/Accession is given a HOST UID. The UID is stored in this location. If LEDI software is used to accession specimens, usually the collecting sites UID is used to track specimens. If the collecting UID conflict is the HOST system number sequence, the HOST UID will be used instead of the collection facility's UID. This field is used by the LEDI software
	Ordering Site UID field (#17): This field contains the collection facility UID for this specimen. This field is used by the LEDI software.

LEDI Installation Instructions

This section provides detailed instructions for installing LEDI Patch LA*5.2*27 and Patch LR*5.2*153. Examples of the installation process and post installation instructions are also included in this section.

LEDI Patch Descriptions

Patch LR*5.2*153 and LR*5.2*27 comprise the Laboratory Electronic Data Interchange (LEDI) software enhancement to the Laboratory application. Both patches are integrated to provide LEDI functionality and are required to be installed together via KIDS.

Patch LA*5.2*27 provides the following: (1) Electronic Messaging, (2) Specimen shipping manifest, (3) HL7 communication, and (4) Automated Lab Instrument modifications.

Patch LR*5.2*153 provides the following: (1) LEDI specimen accessioning, (2) Result verification, (3) Result data storage, and (4) Specimen status update.

Installation Time

The actual KIDS install of the LEDI patches is typically less than 45 minutes.

Associated Patches:

Associated patches: LR*5.2*65 <=<= **must** be installed BEFORE LA*5.2*27
Associated patches: LA*5.2*17 <=<= **must** be installed BEFORE LA*5.2*27
Associated patches: LR*5.2*121 <=<= **must** be installed BEFORE LA*5.2*27
Associated patches: LR*5.2*128 <=<= **must** be installed BEFORE LA*5.2*27
Associated patches: LA*5.2*23 <=<= **must** be installed BEFORE LA*5.2*27
Associated patches: XU*8.0*36 <=<= **must** be installed BEFORE LA*5.2*27
Associated patches: XU*8.0*44 <=<= **must** be installed BEFORE LA*5.2*27
Associated patches: LR*5.2*140 <=<= **must** be installed BEFORE LA*5.2*27
Associated patches: LA*5.2*25 <=<= **must** be installed BEFORE LA*5.2*27
Associated patches: LR*5.2*171 <=<= **must** be installed BEFORE LA*5.2*27

MailMan and Kernel Patches:

All MailMan, FileMan and Kernel patches **must** be current to avoid problems loading and/or installing the LEDI patches LA*5.2*27 and LR*5.2*153.

(Revised 12/4/97)

User Installation Warning

It is strongly recommended that users are inhibited from login into the system.

The consequences of having users on the system while installing the patches are:

1. Users of the Laboratory and OE/RR software applications adding or editing records will get a 'source routine edited' error, the edits will be lost and records may be left in an inconsistent state. Note that the routines in this patch are heavily used in *VISTA* Laboratory applications.
2. Inability to restore system if install should fail and routines/data dictionary changes left in an incomplete state.

TaskMan/MailMan

TaskMan or MailMan **SHOULD NOT** be stopped.

Journaling

Disable Journaling.

Shut Down Laboratory Application

Shut down the Lab application gracefully. This is done by entering the following command in programmer mode in the UCI and on the CPU where the Lab routine is running. Be sure to do a system status to verify where the Lab routine is running and **DO NOT** shut down the Lab routine if any automated instruments are still sending automated testing data.

At the Mumps Programmer prompt type the following:

S ^LA("STOP",x)="" where x = Instrument number

(i.e., 1 for the first LSI and 11 for the second LSI)

Example: S ^LA("STOP",1)=""

This mumps code should stop the LAB routine for the first LSI.

Wait 2-3 minutes and check the system status. If the LAB jobs are still running you will have to force the LAB jobs to stop. Use the appropriate system utility to stop running jobs.

Check Map Sets

Check map sets if used, and unmap LR* and LA* routines. A new list of recommend routines to be mapped are listed later in the install procedure.

HL7 Background Job

The HL7 background job (HLLP) for the Lab Universal Interface **MUST** be stopped.

(Revised 12/4/97)

LA7UIIN Routine

The LA7UIIN routine to process incoming HL7 messages **SHOULD NOT** be running.

Auto Download

If using auto download, the LA7ADL routine **SHOULD NOT** be running. Use option Start/Stop Auto Download Background Job [LA7 ADL START/STOP] to stop the auto download job if running.

Example: Start/Stop Auto Download Background Job

D ^XUP

Select Lab Universal Interface Menu Option: ?

- 1 Print Source of Specimen Table
- 2 Print Lab Universal Interface Log
- 3 Display Lab Universal Interface Message
- 4 Download to Universal Interface
- 5 Start/Stop Auto Download Background Job

Enter ?? for more options, ??? for brief descriptions, ?OPTION for help text.

Select Lab Universal Interface Menu Option: **5** Start/Stop Auto Download Background Job

Select one of the following:?

- 1 Start/Restart Auto Download Job
- 2 Shutdown Auto Download Job
- 3 Shutdown Auto Download Job and Stop Collecting Accessions

Current Status is: Running
 at: May 23, 1997@14:15:02
 by: DOE, JOHN

Select action: **2** Shutdown Auto Download Job
 Auto Download flag set to Shutdown Auto Download Job

Backup

Perform a Full System Backup. This will give a method of recovery if there is a system failure during installation. This patch contains data dictionaries, routines, and options.

(Revised 12/4/97)

LEDI Installation Process

The LEDI LA*5.2*27 and LR* 5.2*153 patches are using the KIDS Standard Distribution. For further instructions on using KIDS, please refer to the Kernel Version 8.0 Systems Manual, Chapter 26, pages 393-409. The KIDS Standard Distributions are performed in three phases.

Phase 1: Loading transport globals from a Distribution

The LEDI patch name is LAB_LED.IKID. This KIDS build contains both LA*5.2*27 and LR*5.2*153. The specific loading to the KIDS build is system specific. The examples given may vary from your system configuration.

Select the Kernel Installation and Distribution System [XPD MAIN] Menu. From that menu select the Installation menu [XPD INSTALLATION MENU], Load a Distribution [XPD LOAD DISTRIBUTION] option. The installer chooses the HOST FILE SERVER (HFS) to load LAB_LED.IKID file. This option will load the KIDS Patch LA*5.2*27 and Patch LR*5.2*153 onto your system.

Select the Verify Checksum in Transport Global [XPD PRINT CHECKSUM] option to verify that all routines have the correct checksums.

Select the Backup a Transport Global [XPD BACKUP] option to preserve a copy of the routines exported in these patches prior to the installation.

Select the Compare a Transport Global to Current System [XPD COMPARE TO SYSTEM] option to compare the routines. You may also compare the routines in your production account to the routines in the patches by using this option.

NOTE: The following examples display the terminal screen dialogue seen during the LEDI patches installation process. However, the dates shown are **not** the same as those in the software released version.

(Revised 12/4/97)

NOTE: If the site has installed the following class III software package:

NAME: LAB REPORTS VIA NETWORK MAIL PREFIX: AUMX

There exists the possibility of confusion in naming of fields in the INTERIM REPORTS file (#64.6). The fields in question are:

#6 DOMAIN NAME (installed by patch LR*5.2*164)
 #695000 DOMAIN NAME (installed by Class III package AUMX)

As a courtesy to sites, this install will rename DOMAIN NAME field (#69500) to AUMX DOMAIN NAME field (#69500) if the field is found to exist in the Data Dictionary of the INTERIM REPORTS file (#64.6). If the field does **not** exist, the following statement will be displayed during the KIDS install.

Example: Data Dictionary for File #64.6 not installed, failed DD screen.

The install will continue to proceed normally.

Example:

D ^XUP

Select Kernel Installation & Distribution System Option: **In<RET>**stallation

- 1 Load a Distribution
- 2 Verify Checksums in Transport Global
- 3 Print Transport Global
- 4 Compare Transport Global to Current System
- 5 Backup a Transport Global
- 6 Install Package(s)
- Restart Install of Package(s)
- Unload a Distribution

Select Installation Option: **6** INstall Package(s)

Select INSTALL NAME: **LA*5.2*27** Loaded from Distribution 12/3/97@11:51:37
 => LEDI UPGRADE LA*27 & LR*153 ;Created on Dec 03, 1997@10:18:07

This Distribution was loaded on Dec 03, 1997@11:51:37 with header of LEDI UPGRADE LA*27 & LR*153 ;Created on Dec 03, 1997@10:18:07

It consisted of the following Install(s):

LA*5.2*27
 LR*5.2*153

LA*5.2*27

Will first run the Environment Check Routine, LA27

--- Environment Check is Ok ---

(Revised 12/4/97)

Phase 2: Answering Installation Question for Transport Globals in a Distribution

Install Questions for LA*5.2*27

Incoming Files:

60 LABORATORY TEST (Partial Definition)
Note: You already have the 'LABORATORY TEST' File.

62.48 LA7 MESSAGE PARAMETER
Note: You already have the 'LA7 MESSAGE PARAMETER' File.

62.485 LA7 MESSAGE LOG BULLETINS (including data)
Note: You already have the 'LA7 MESSAGE LOG BULLETINS' File.
I will OVERWRITE your data with mine.

62.49 LA7 MESSAGE QUEUE
Note: You already have the 'LA7 MESSAGE QUEUE' File.

62.8 LAB SHIPPING MANIFEST
Note: You already have the 'LAB SHIPPING MANIFEST' File.

62.85 LAB SHIPPING EVENT
Note: You already have the 'LAB SHIPPING EVENT' File.

62.9 LAB SHIPPING CONFIGURATION
Note: You already have the 'LAB SHIPPING CONFIGURATION' File.

62.91 LAB SHIPPING CONTAINER
Note: You already have the 'LAB SHIPPING CONTAINER' File.

62.92 LAB SHIPPING METHOD
Note: You already have the 'LAB SHIPPING METHOD' File.

62.93 LAB SHIPPING CONDITIONS
Note: You already have the 'LAB SHIPPING CONDITIONS' File.

(Revised 12/4/97)

LR*5.2*153

Will first run the Environment Check Routine, LR153

--- Environment Check is Ok ---

Install Questions for LR*5.2*153

Incoming Files:

2 PATIENT (Partial Definition)

Note: You already have the 'PATIENT' File.

60 LABORATORY TEST (Partial Definition)

Note: You already have the 'LABORATORY TEST' File.

62.05 URGENCY (Partial Definition)

Note: You already have the 'URGENCY' File.

62.6 ACCESSION TEST GROUP (Partial Definition)

Note: You already have the 'ACCESSION TEST GROUP' File.

63 LAB DATA (Partial Definition)

Note: You already have the 'LAB DATA' File.

64.061 LAB ELECTRONIC CODES (including data)

Note: You already have the 'LAB ELECTRONIC CODES' File.

64.6 INTERIM REPORTS (Partial Definition)

Data Dictionary FAILED the screening logic, file will NOT be installed!

67 REFERRAL PATIENT

Note: You already have the 'REFERRAL PATIENT' File.

68 ACCESSION (Partial Definition)

Note: You already have the 'ACCESSION' File.

69 LAB ORDER ENTRY (Partial Definition)

Note: You already have the 'LAB ORDER ENTRY' File.

69.6 LAB PENDING ORDERS ENTRY

Note: You already have the 'LAB PENDING ORDERS ENTRY' File.

(Revised 12/4/97)

LEDI Installation Instructions

Want to DISABLE Scheduled Options, Menu Options, and Protocols? YES//<RET>

Enter options you wish to mark as 'Out Of Order': **LRMENU** Laboratory DHCP Menu

Enter options you wish to mark as 'Out Of Order':<RET>

Enter Protocols you wish to mark as 'Out Of Order':<RET>

Delay Install (Minutes): (0-60): 0//<RET>

Enter the Device you want to print the Install messages.
You can queue the install by enter a 'Q' at the device prompt.
Enter a '^' to abort the install.

DEVICE: HOME// **VIRTUAL**

(Revised 12/4/97)

Phase 3: KIDS Installation of Patch LA*5.2*27 and Patch LR*5.2*153

NOTE: The post-install will create the mail Group LAB MESSAGING and add the current user as a member. If the install prompts for additional members the site should add the Lab LIM. Otherwise additional members can be added later using normal mail group membership edit options.

Install Started for LA*5.2*27:
Dec 03, 1997@11:58:54

Installing Routines:
Dec 03, 1997@11:58:54

Running Pre-Install Routine: PRE^LA27

```

--- Starting Pre Install ---
--- No action necessary ---
--- End Pre Install ---

```

Installing Data Dictionaries:
Dec 03, 1997@11:58:57

Installing Data:
Dec 03, 1997@11:58:57

Installing PACKAGE COMPONENTS:

Installing PRINT TEMPLATE

Installing SORT TEMPLATE

Installing INPUT TEMPLATE

Installing OPTION
Dec 03, 1997@11:59

Running Post-Install Routine: POST^LA27

```

--- Starting Post Install ---
--- Checking if Lab Messaging Error Log needs converting ---
--- Finished Lab Messaging Error Log Conversion ---
--- Checking if LAB SHIPPING EVENT file needs converting ---
--- Finished LAB SHIPPING EVENT Conversion ---

```

(Revised 12/4/97)

```
Lab Shipping Menu [LA7S MAIN MENU] Option
was added to the Laboratory DHCP Menu [LRMENU]
Lab Shipping Management Menu [LA7S MGR MENU] Option
was added to the Lab liaison menu [LRLIAISON]
--- Setting up mail group LAB MESSAGING ---
Mail group LAB MESSAGING setup SUCCESSFUL
*** NOTE: Remember to schedule option LA7TASK NIGHTY ***
--- End Post Install ---
```

Updating Routine file...

Updating KIDS files...

LA*5.2*27 Installed.
Dec 03, 1997@11:59:02

Install Started for LR*5.2*153:
Dec 03, 1997@11:59:02

Installing Routines:
Dec 03, 1997@11:59:03

Running Pre-Install Routine: PRE^LR153

```
*** Disregard KIDS install failure message ***
*** concerning file INTERIM REPORTS (#64.6) ***
*** DD for this file is only installed if site ***
*** has local field #695000, DOMAIN NAME ***
```

Installing Data Dictionaries:

Data Dictionary for File #64.6 not installed, failed DD screen.
Dec 03, 1997@11:59:12

Installing Data: ...
Dec 03, 1997@11:59:13

Installing PACKAGE COMPONENTS:

Installing SECURITY KEY

Installing OPTION
Dec 03, 1997@11:59:14

(Revised 12/4/97)

Post-Installation Instructions

The following post-installation instructions **must** be done, if instructions pertain to your system.

1. Enable journaling, BE SURE TO JOURNAL ^LAHM(global.
2. After a successful install remove routines LA27 and LR153 from all systems.
3. Move newly installed routines to all systems if appropriate for your system.
4. Rebuild Map sets if appropriate.
5. Revised list of routines to include in map set.

LAGEN
LAMIAUT*
LA7V*
LA7A*
LRAFUNC*
LRCAPA*
LRCAPU
LRCAPV*
LRDIQ
LRDPA*
LREVENT
LRGEN*
LRLAB*
LRLT*
LRMI*
LRO*
LRPARAM
LRPEND
LRR*
LRV*
LRW*
LRX*

6. Restart LAB background Job(s) if used.
7. Restart HLLP job(s) stopped earlier.

8. Restart the auto download if appropriate.

Example: Start/Restart Auto Download Job

Select Lab Universal Interface Menu Option: **Start/Stop Auto Download Background Job**

Select one of the following:

- 1 Start/Restart Auto Download Job
- 2 Shutdown Auto Download Job
- 3 Shutdown Auto Download Job and Stop Collecting Accessions

Current Status is: Shutdown Auto Download Job
 at: May 23, 1997@14:21:46
 by: DOE, JOHN

There are NO accessions waiting checking

Select action: **1** Start/Restart Auto Download Job
 Auto Download flag set to Start/Restart Auto Download Job
 Auto Download - Queued to run as task #7548883

9. Return the system back to the users.

10. Setting up Shipping Manifest printers can be done at anytime prior to the use of LEDI specimen shipping options. Here are examples of the device and terminal type set up for a Shipping Manifest HP Laser jet printer. Refer to the documentation for more specifics.

Example: Device Set up

NAME: LAC-LASER	\$I: _LTA423:
ASK DEVICE: NO	VOLUME SET(CPU): ROU
SIGN-ON/SYSTEM DEVICE: NO	LOCATION OF TERMINAL: C266
SUPPRESS FORM FEED AT CLOSE: YES	*MARGIN WIDTH: 132
*FORM FEED: #	*PAGE LENGTH: 62
*BACK SPACE: \$(8)	SUBTYPE: P-HP LASER
TYPE: TERMINAL	LAT PORT SPEED: 96

Example: Terminal Type

NAME: P-HP LASER	RIGHT MARGIN: 132
FORM FEED: #	PAGE LENGTH: 62
BACK SPACE: \$(8)	
OPEN EXECUTE: W \$(27,69),\$(27,40,115,49,54,46,54,55,72),\$(27,38,108,48,79)	
CLOSE EXECUTE: W \$(27,69),\$(27,40,115,49,48,72)	
10 PITCH: \$(27)_(s10H"	12 PITCH: \$(27)_(s12H"
UNDERLINE ON: \$(27)_"&dD"	UNDERLINE OFF: \$(27)_"&d@"
HIGH INTENSITY (BOLD): \$(27)_(s3B"	LOW INTENSITY (UNBOLD): \$(27)_(s-3B"
NORMAL INTENSITY (RESET): \$(27)_(s0B"	
DESCRIPTION: HP LASER COMPRESSED PRINT	
16 PITCH: \$(27)_(s16.7H"	

LEDI Implementation Setup

This section contains the necessary information required for the IRM staff, LIM, and other Laboratory users to implement and maintain the LEDI software application.

IRM and LIM Staff

The LEDI Implementation Setup **must** be coordinated by the **IRM** and **LIM** staff. The setup consists of seven steps. These steps **must** be done in the sequences listed below to ensure a successful LEDI Implementation Setup.

NOTE: The LEDI Implementation Setup has two parts:

The **Host facility** laboratory **must** be setup to receive the electronic Shipping Manifest List (transmitted by the Collection facility laboratory), bar code the specimen arrival, perform the specified lab tests, verifies the lab test results, and transmits the lab test results back to the Collection facility.

The **Collection facility** laboratory **must** be setup to create an electronic Shipping Manifest (specifying lab tests to be performed by the Host facility laboratory), transmit the Shipping Manifest to the Host facility laboratory, and transport the specimen via carrier to the “Host facility” laboratory.

Step #1 **IRM:** MailMan or TCP/IP for HL7 Message Transfer

VA MailMan: Facilities using MailMan for their HL7 message transfer **must** update the Domain field (#60) in the INSTITUTION file (#4). The update will allow the LEDI Setup [LA7V SETUP] option to automatically setup the HL7 remote server for the Host or Collection facility laboratories. The LEDI Setup [LA7V SETUP] option also creates an LA7V mail group. This mail group uses the LA7V name space concatenated with the receiving facilities primary station number. If the Domain field (#60) in the INSTITUTION file (#4) contains data the LEDI Setup [LA7V SETUP] option will automatically add the HL7 remote server to the Remote Members field (#12) in the MAIL GROUP file (#3.8). **Note:** If the Domain field (#60) in the INSTITUTION file (#4) is null the sites **must** then manually add the server to the mail group that was created by the LEDI Setup [LA7V SETUP] option.

TCP/IP: Sites using TCP/IP for their HL7 message transfer will **not** require any extra setup to create HL7 links. The LEDI Setup [LA7V SETUP] option is also used for creating all of the necessary HL7 links.

Step #2 IRM: Add Members To Mail Groups

Add designated members to the specified LEDI mail groups. It is highly recommended that the LIM is designated as a member of all the LEDI mail groups except for the LAV7* mail groups.

Step #3 IRM: Schedule TaskMan

Schedule via TaskMan the Lab Messaging Nightly Cleanup [LA7TASK NIGHTY] option to run on a daily basis. This scheduled option will purge the data in the LA7 MESSAGE QUEUE file (#62.49).

Example:

Select OPTION to schedule or reschedule: **LA7TASK NIGHTY** Lab Messaging
Nightly Cleanup

...OK? Yes//<RET> (Yes)

Edit Option Schedule

Option Name: LA7TASK NIGHTY

Menu Text: Lab Messaging Nightly Cleanup

TASK ID: 8278506

QUEUED TO RUN AT WHAT TIME: **JUL 14,1997@23:15**

DEVICE FOR QUEUED JOB OUTPUT: **NULL DEVICE;P-OTHER;132;64**

QUEUED TO RUN ON VOLUME SET:<RET>

RESCHEDULING FREQUENCY: **1D**

TASK PARAMETERS:

SPECIAL QUEUEING:

Exit Save Next Page Refresh

Enter a command or '^' followed by a caption to jump to a specific field.

COMMAND: N

Press <PF1>H for help Insert

Edit Option Schedule

Option Name: LA7TASK NIGHTY

VARIABLE NAME: LA7FIX

VALUE: 0

VARIABLE NAME: LA7ION

VALUE: "IRM DEVELOP LASER1"

VARIABLE NAME: LA7LOG

VALUE: 1

VARIABLE NAME:

VALUE:

VARIABLE NAME:

VALUE:

Step #4 LIM: Implementation Requirements

Host Facility

The Host facility laboratory **must** provide the Collection facility laboratory with a list of lab tests that are available for processing. The Host facility may use the Electronic Catalog Menu [LAS7 CATALOG MENU] options to produce a list of the lab tests. The Electronic Catalog menu [LAS7 CATALOG MENU] is located on the Lab Shipping Management Menu [LA7S MGR MENU]. This menu is located on the Lab Liaison [LRLIAISON] menu.

The Host facility laboratory **must** provide the Collection facility laboratory with a list of the National Lab Test (NLT) codes used by Host facility laboratory. The Host facility may also use the Electronic Catalog Menu [LAS7 CATALOG MENU] options to produce a list of the NLT codes.

The Host facility **must** define a Lab Shipping Configuration for each Collection facility laboratory. The Lab Shipping Configuration determines how the NUMERIC IDENTIFIER is generated and managed.

The Host facility **must** provide each Collection facility with a NUMERIC IDENTIFIER.

NOTE: The Host facility **must not** use that specific NUMERIC IDENTIFIER for any local accessioning. This NUMERIC IDENTIFIER is to be used only by the Collection facility laboratory for which it was assigned.

NOTE: The design of the LEDI software allows the Host facility laboratory to accession and use pre-labeled bar-coded specimens. If the Host facility laboratory does not want to re-label specimens, the Collection facility laboratory **must** be assigned a two character NUMERIC IDENTIFIER for the Accession Area.

Collection Facility

The Collection and Host facility laboratories **must** establish which lab tests will be processed.

The Collection facility **must** be provided the following information by the Host facility:

Specimen collection requirements	Schedule of testing
Normal range and critical values	Patient prep instructions load
NLT code to be used to order the test	List of tests for panel tests
NLT codes used to report the results	Accession Area numeric identifier
Bar-code symbology and label stock	

The Collection facility **may** utilize the existing lab test entries in the LABORATORY TEST file (#60) providing the lab tests entries are compatible with the above list.

The Collection facility **must** add all new lab tests to the LABORATORY TEST file (#60).

The Collection facility **must** be provided a list of the NLT codes used by the Host facility laboratory. The Host facility can generate a list of their facility NLT codes by using the new Electronic Catalog Menu [LAS7 CATALOG MENU].

The Collection facility **must** define a Load List. The Load List **must** contain all of the lab tests that are processed by the Host facility laboratory. The Host facility can generate a list of their facility lab tests by using the Electronic Catalog Menu [LAS7 CATALOG MENU].

The Collection facility **must** be provided a NUMERIC IDENTIFIER by the Host facility for creating an Accession Area.

The Collection facility **must** create an Accession Area in ACCESSION file (#68) using VA FileMan [DIUSER] Enter or Edit [DIEDIT] option. The Collection facility Accession Area **must** ONLY be used for specimens/lab tests being sent to the Host facility laboratory for processing. These specimens/lab tests **must** be accessioned to that specific Accession Area.

The Collection facility **must** create an Automated Instrument (AI). The AI will accommodate the Host facility laboratory lab test results being transmitted back to the Collection facility laboratory. The new LEDI Setup [LA7V SETUP] option is used to create the AI and UI results NLT codes (see Step #6 for details).

Step #5 **LIM**: Lab Shipping Files Setup

The following instructions **must** be adhered to when setting up the four Lab Shipping files. The Lab Shipping Management [LA7S MGR MENU] menu contains the options used for setting up the files. The menu is located on the Lab Liaison [LRLIAISON] menu. The requirement as to which files are setup is dependent on the type of facility (collection or host).

Collection Facility:

The Collection facility must setup the following four files:

LAB SHIPPING METHOD file (#62.92)

LAB SHIPPING CONDITION file (#62.93)

LAB SHIPPING CONTAINER file (#62.91)

LAB SHIPPING CONFIGURATION file (#62.9)

Host Facility:

The Host facility must setup the following file:

LAB SHIPPING CONFIGURATION file (#62.9)

NOTE: Host facilities that are also Collection facilities **must** follow the setup instructions for the Collection facilities, as it pertains to the specimens that are shipped to Host facilities.

(Revised 12/4/97)

NOTE: When setting up the four Lab Shipping files, you **must** follow this set up sequences:

LAB SHIPPING METHOD file (#62.92)

File #62.92 **must** be setup *first*. This file contains the transport method used to ship the specimens (i.e., Courier, Taxi, FEDEX, UPS, etc.).

Example: The Edit Shipping Method [LA7S EDIT 62.92] option is used to setup this file.

```
Select Lab liaison menu Option: SMGR  Lab Shipping Management Menu

Select Lab Shipping Management Menu Option: ?

    CFE    Edit Shipping Configuration
    CTE    Edit Shipping Container
    CME    Edit Shipping Method
    CDE    Edit Shipping Condition
    LSU    LEDI Setup
    CAT    Electronic Catalog Menu

Enter ?? for more options, ??? for brief descriptions, ?OPTION for help text.

Select Lab Shipping Management Menu Option: CME  Edit Shipping Method
Select SHIPPING METHOD: ?
Answer with LAB SHIPPING METHOD NAME
    You may enter a new LAB SHIPPING METHOD, if you wish
    NAME MUST BE 3-30 CHARACTERS, NOT NUMERIC OR STARTING WITH
    PUNCTUATION
Select SHIPPING METHOD: FEDEX
Are you adding 'FEDEX' as a new LAB SHIPPING METHOD (the 1ST)? Y  (Yes)
NAME: FEDEX//<RET>

Select Lab Shipping Management Menu Option: CME  Edit Shipping Method
Select SHIPPING METHOD: COURIER
Are you adding 'COURIER' as a new LAB SHIPPING METHOD (the 2ND)? Y  (Yes)
NAME: COURIER//<RET>
```

(Revised 12/4/97)

LAB SHIPPING CONDITION file (#62.93)

File #62.93 is the *second* file to be setup. This file contains entries that describe the conditions under which a shipment is transported (i.e., Ambient temperature, Frozen, Refrigerated, etc.).

Example: The Edit Shipping Condition [LA7S EDIT 62.93] option is used to setup this file.

```
Select Lab liaison menu Option: SMGR  Lab Shipping Management Menu

Select Lab Shipping Management Menu Option: ?

    CFE    Edit Shipping Configuration
    CTE    Edit Shipping Container
    CME    Edit Shipping Method
    CDE    Edit Shipping Condition
    LSU    LEDI Setup
    CAT    Electronic Catalog Menu

Select Lab Shipping Management Menu Option: CDE  Edit Shipping Condition
Use this option to setup the Lab Shipping Condition file.

Select SHIPPING CONDITION: ?
Answer with LAB SHIPPING CONDITIONS NAME
    You may enter a new LAB SHIPPING CONDITIONS, if you wish
    NAME MUST BE 3-30 CHARACTERS, NOT NUMERIC OR STARTING WITH
    PUNCTUATION
Select SHIPPING CONDITION: Room Temperature
Are you adding 'Room Temperature' as
a new LAB SHIPPING CONDITIONS (the 1ST)? No// Y (Yes)
NAME: Room Temperature//<RET>
ABBREVIATION: RT
```

LAB SHIPPING CONTAINER file (#62.91)

File #62.91 is the *third* file setup. This file contains the type of containers that the lab uses to ship lab specimens. There are basically two types of containers:

Type 1-Specimen containers that are used to hold the specimen.

Type 2- Packaging containers that are used to contain the specimen containers.

Presently when adding entries to File #62.91 they are classified according to type:

Packaging Type - the specimen is shipped in the original collection container.

Aliquot - the specimen transferred to a tube/jar before shipment.

Packaging - container used to hold specimen containers.

Example: The Edit Shipping Container [LA7S EDIT 62.91] option is used to setup this file.

Select Lab liaison menu Option: **SMGR** Lab Shipping Management Menu

Select Lab Shipping Management Menu Option: ?

CFE	Edit Shipping Configuration
CTE	Edit Shipping Container
CME	Edit Shipping Method
CDE	Edit Shipping Condition
LSU	LEDI Setup
CAT	Electronic Catalog Menu

Select Lab Shipping Management Menu Option: **CTE** Edit Shipping Container
Use this option to setup the Lab Shipping Container file.

Select SHIPPING CONTAINER: ?

Answer with LAB SHIPPING CONTAINER NAME

You may enter a new LAB SHIPPING CONTAINER, if you wish
NAME MUST BE 3-30 CHARACTERS, NOT NUMERIC OR STARTING WITH
PUNCTUATION

Select SHIPPING CONTAINER: **Plastic Tube**

Are you adding 'Plastic Tube' as

a new LAB SHIPPING CONTAINER (the 1ST)? No// **Y** (Yes)

NAME: Plastic Tube//<RET>

TYPE: ?

Enter what this container is used for.

Choose from:

1	PACKAGING
2	PRIMARY
3	ALIQUT

TYPE: **3** ALIQUT

LAB SHIPPING CONFIGURATION file (#62.9)

File #62.9 is the *fourth* and final file requiring setup. This file is used to define the two members (institutions) that have a relationship. This file is used to group the Collection and Host facilities and describe particulars of their relationship (i.e., what specimen ID is used, what types of tests/specimens are shipped, who is the Collection/Host facility, are the facilities linked electronically, and are they on the same computer system).

Example: The Edit Shipping Configuration [LA7S EDIT 62.9] option is used to setup this file.

Select Lab Shipping Management Menu Option: ?

```
CFE    Edit Shipping Configuration
CTE    Edit Shipping Container
CME    Edit Shipping Method
CDE    Edit Shipping Condition
LSU    LEDI Setup
CAT    Electronic Catalog Menu ...
```

Enter ?? for more options, ??? for brief descriptions, ?OPTION for help text.

Select Lab Shipping Management Menu Option: **CFE** Edit Shipping Configuration
Use this option to setup your Lab Shipping Configuration file.

Select SHIPPING CONFIGURATION:?

Answer with LAB SHIPPING CONFIGURATION NAME, or COLLECTING FACILITY:

HINES REFERRAL

You may enter a new LAB SHIPPING CONFIGURATION
NAME MUST BE 3-30 CHARACTERS, NOT NUMERIC OR STARTING WITH
PUNCTUATION

Select one of the following:

- 1 Collecting facility
- 2 Host facility

Are you editing this entry as the: **1** Collecting facility

NAME: HINES REFERRAL//<RET>

COLLECTING FACILITY: **MILWAUKEE, WI**//

HOST FACILITY: HINES, IL//<RET>

HOST FACILITY'S SYSTEM: HINES, IL//<RET>

STATUS: ACTIVE//<RET>

LAB MESSAGING LINK: LA7V HOST 578//<RET>

SHIPPING METHOD: QUEST COURIER//<RET>

BARCODE MANIFEST: YES//<RET>

MANIFEST RECEIPT: YES//<RET>

Select TEST/PROFILE: VIRAL TITER-HERPES-CONVAL//<RET>

TEST/PROFILE: VIRAL TITER-HERPES-CONVAL//<RET>

ACCESSION AREA: HINES//<RET>

SPECIMEN:

URGENCY:

```
SPECIMEN CONTAINER: PLASTIC VIAL//  
SHIPPING CONDITION: REFRIGERATED//  
PACKAGING CONTAINER: PAINT CAN//  
Select TEST/PROFILE: ^  
  
Select Lab Shipping Management Menu Option: CFE Edit Shipping Configuration  
Select SHIPPING CONFIGURATION: ?  
IRON MOUNTAIN  
  
You may enter a new LAB SHIPPING CONFIGURATION  
NAME MUST BE 3-30 CHARACTERS, NOT NUMERIC OR STARTING WITH  
PUNCTUATION  
Select one of the following:  
  
Select one of the following:  
  
1 Collecting facility  
2 Host facility  
  
Are you editing this entry as the: 2 Host facility  
NAME: IRON MOUNTAIN//  
COLLECTING FACILITY: IRON MOUNTAIN, MI//  
HOST FACILITY: MILWAUKEE, WI//  
HOST FACILITY'S SYSTEM: MILWAUKEE, WI//<RET>  
STATUS: ACTIVE//<RET>  
COLLECTING FACILITY'S SPEC ID: COLLECTING FACILITY  
//<RET>  
COLLECTING FACILITY'S SYSTEM: IRON MOUNTAIN, MI//<RET>  
Select TEST/PROFILE: URINE ETHANOL-SCRN//  
TEST/PROFILE: URINE ETHANOL-SCRN//  
HOST COLLECTION SAMPLE: URINE//  
Select TEST/PROFILE:
```

Step #6 LIM: LEDI Setup

The LEDI Setup [LA7V SETUP] option allows the LIM to setup a Collection and/or Host facility laboratory Auto-Instruments and HL7 environment. This option is located on the Lab Shipping Management [LA7S MGR MENU] menu of the Lab Liaison [LRLIAISON] menu.

The LEDI software is using the INSTITUTION file (#4), Domain field (#60) to route HL7 MailMan messages to the Collection and Host facilities. The Collection facility institution number **must** be defined in the Host facility INSTITUTION file (#4). The Host facility institution number **must** be defined in the Collection facility INSTITUTION file (#4).

NOTE: The two institution names used in the following screen displays are examples **ONLY**. Do **NOT** use these two institution names to set up your Host or Collection facility.

Examples:

Select Lab liaison menu Option: **SMGR** Lab Shipping Management Menu

Select Lab Shipping Management Menu Options: ?

CFE	Edit Shipping Configuration
CTE	Edit Shipping Container
CME	Edit Shipping Method
CDE	Edit Shipping Condition
LSU	LEDI Setup
CAT	Electronic Catalog Menu

Select Lab Shipping Management Menu Option: **LSU** LEDI Setup

LEDI Setup

COLLECTION Labs: Use option #1 to setup HOST labs.

HOST Labs: Use option #2 to setup COLLECTION labs.

1. Add/Edit HOST Lab
2. Add/Edit COLLECTION Lab

Enter a number (1-2): ?

Option #1 will setup HOST site auto-instruments, HOST site message configuration, and HOST and COLLECTION sites HL7 environment.

Option #2 will setup COLLECTION site auto-instruments, COLLECTION site message configuration, and COLLECTION and HOST sites HL7 environment.

Option #1 and #2 SHOULD be used by sites that are both a HOST and a COLLECTION site.

Enter a number (1-2): **1**

HOST Lab(s)

1. Add HOST Lab

Enter a number (1-1): ?

Enter a '1' to create a new HOST lab.

Enter a number between 1 and 1.

Enter a number (1-1): **1**

 HOST Lab Setup

1. HOST Lab:
 2. Logical Link (MailMan or TCP/IP):
 3. Automated Instrument:
- Enter a number (1-3): ?

Enter a '1' to create the HL7 environment along with the Auto-Instrument and LA7 Message Configuration.
 Enter a '2' to create the link between the HOST and COLLECTION labs.
 Enter a '3' to identify the list of test you expect back from the HOST lab.
 Enter a '4' to identify the length of time before purging the messages in the LA7 Message Queue file (62.49).
 Enter a '5' to identify the type of Error Conditions you wish to receive for this Auto-Instrument.

Enter a number (1-3): 1

Select INSTITUTION NAME: **[Type your Trading Partner institution name]**

Setting up the following Host Labs for ISC-BIRMINGHAM, AL

Updating HL7 APPLICATION PARAMETER file (#771).

Adding LA7V REMOTE 521

Adding LA7V HOST 170

Updating PROTOCOL file (#101).

Located in the LA7 (LAB MESSAGING) namespace.

Adding LA7V Receive Results from 170

Located in the LA7 (LAB MESSAGING) namespace.

Adding LA7V Process Results from 170

Located in the LA7 (LAB MESSAGING) namespace.

Adding LA7V Order from 170

Located in the LA7 (LAB MESSAGING) namespace.

Adding LA7V Send Order to 170

Located in the LA7 (LAB MESSAGING) namespace.

Adding LA7V Query for Results from 170

Located in the LA7 (LAB MESSAGING) namespace.

Adding LA7V Send Query to 170

Updating LA7 MESSAGE PARAMETER file (#62.48) for the HOST Lab REGION 7 ISC,TX (DEMO).

Adding LA7V HOST 170

Updating LAB AUTO INSTRUMENT file (#62.4) for HOST Lab REGION 7 ISC,TX (DEMO)

Adding LA7V HOST 170

HL7 v1.6 Environment setup is complete!!

HOST Lab Setup

1. HOST Lab: REGION 7 ISC,TX (DEMO) (Uneditable)
2. Logical Link (MailMan or TCP/IP):
3. Automated Instrument:
4. GRACE PERIOD FOR MESSAGES:
5. ALERT CONDITION: 

Enter a number (1-5): **2**

Logical Link for transmissions to/from REGION 7 ISC,TX (DEMO)

Protocol	Logical Link
LA7V Process Results from 170 LA7V Send Query to 170 LA7V Send Order to 170	

Enter a Logical Link: (MM/TCP): **TCP/IP**

Updating the HL LOWER LEVEL PROTOCOL PARAMETER file (#869.2)
Adding LA7V170T521-TCP

Updating HL LOGICAL LINK file (#870).
Adding LA7V 170

Updating the HL LOWER LEVEL PROTOCOL PARAMETER file (#869.2)
Adding LA7V521-TCP-RECV

Updating HL LOGICAL LINK file (#870).
Adding LA7V 521

Updating the PROTOCOL file (#101).

[NOTE: If MailMan is used, only LA7V 170 Logical Link and Lower Level Protocol would be created.]


```

-----
                        HOST Lab Setup
-----

1. HOST Lab:   REGION 7 ISC,TX (DEMO)  (Uneditable)
2. Logical Link (MailMan or TCP/IP): DATA
3. Automated Instrument:
4. GRACE PERIOD FOR MESSAGES:
5. ALERT CONDITION:

Enter a number (1-5): 2

-----
                Logical Link for transmissions to/from REGION 7 ISC,TX (DEMO)
-----

      Protocol                                Logical Link
      -----                                -
LA7V Process Results from 170                LA7V 170 (TCP)
LA7V Send Query to 170                       LA7V 170 (TCP)
LA7V Send Order to 170                       LA7V 170 (TCP)

Enter a Logical Link:  (MM/TCP): ?

Enter a code from the list.
    Select one of the following:

           MM      MAILMAN
           TCP      TCP/IP

Enter a Logical Link:  (MM/TCP): ??

Enter a code from the list.
    Select one of the following:

           MM      MAILMAN
           TCP      TCP/IP

Enter a Logical Link:  (MM/TCP): ^

```

 HOST Lab Setup

1. HOST Lab: REGION 7 ISC,TX (DEMO) (Uneditable)
2. Logical Link (MailMan or TCP/IP): DATA
3. Automated Instrument:
4. GRACE PERIOD FOR MESSAGES:
5. ALERT CONDITION:

Enter a number (1-5): **3**

AUTOMATED INSTRUMENT: LA7V HOST 170

LOAD/WORK LIST: **CHEMISTRY**

METHOD: **<RET>**

DEFAULT ACCESSION AREA: **<RET>**

OVERLAY DATA: **YES**

Add Chem Tests to the LA7V HOST 170 Automated Instrument for REGION 7 ISC,TX (DEMO).

Select CHEM TESTS: ?

Answer with CHEM TESTS NUMBER

You may enter a new CHEM TESTS, if you wish

Enter the name of a test for which the instrument will send data.

Check that test has a data name.

Answer with LABORATORY TEST NAME

Do you want the entire LABORATORY TEST List? **N** (No)

Select CHEM TESTS: **GLUCOSE**

1 GLUCOSE

2 GLUCOSE, OTHER

CHOOSE 1-2: **1**

Are you adding 'GLUCOSE' as a new CHEM TESTS (the 1st for this AUTO INSTRUMENT)? No// **Y** (Yes)

CHEM TESTS NUMBER: 1//**<RET>**

CHEM TESTS TEST: GLUCOSE//**<RET>**

UI TEST CODE: 84330.0000//**<RET>**

Select CHEM TESTS: **SODIUM**

Are you adding 'SODIUM' as a new CHEM TESTS (the 2ND for this AUTO INSTRUMENT)? No// **Y** (Yes)

CHEM TESTS NUMBER: 2//**<RET>**

CHEM TESTS TEST: SODIUM//**<RET>**

UI TEST CODE: 84295.0000//**<RET>**

Select CHEM TESTS: **^**

 HOST Lab Setup

1. HOST Lab: REGION 7 ISC,TX (DEMO) (Uneditable)
2. Logical Link (MailMan or TCP/IP): DATA
3. Automated Instrument: DATA
4. GRACE PERIOD FOR MESSAGES:
5. ALERT CONDITION:

Enter a number (1-5): 4

GRACE PERIOD FOR MESSAGES: ??

Grace period determines the number of days that messages for this configuration are kept on the system before purging when the message status is "purgable". If this field is left blank, the system assumes 3 days. These messages are found in the LA7 MESSAGE QUEUE file (#62.49). When messages have status of "error" they remain on the system until their corresponding error message is removed from the XTMP global by a KERNEL cleanup task. The messages then become "purgable".

 HOST Lab Setup

1. HOST Lab: REGION 7 ISC,TX (DEMO) (Uneditable)
2. Logical Link (MailMan or TCP/IP): DATA
3. Automated Instrument: DATA
4. GRACE PERIOD FOR MESSAGES: 4
5. ALERT CONDITION:

Enter a number (1-5): 5

Select ALERT CONDITION: ERROR ON MESSAGE// ?

Answer with ALERT CONDITION:

ERROR ON MESSAGE

You may enter a new ALERT CONDITION, if you wish
 Enter "1" to receive alerts for new results and a "2" to receive alerts for errors during processing.
 Error on message alert may only be selected if Field #4, LOG ERRORS, is set to "ON".

Choose from:

- | | |
|---|------------------|
| 1 | NEW RESULTS |
| 2 | ERROR ON MESSAGE |

Step #7 **IRM**: Completing the HL7 Environment Setup

The IRM staff **must** now complete the HL7 Environment Setup using VA FileMan [DIUSER] Enter Or Edit File Entries [DIEDIT] option.

1a. TCP/IP Interfaces

Example: Editing the HL LOWER LEVEL PROTOCOL PARAMETER file (#869.2) to enter the correct IP addresses and ports.

```
Select VA FileMan OPTION: ENTER OR EDIT FILE ENTRIES

INPUT TO WHAT FILE: 869.2 HL LOWER LEVEL PROTOCOL PARAMETER (14 entries)
EDIT WHICH FIELD: ALL//<RET>
Select HL LOWER LEVEL PROTOCOL PARAMETER NAME: LA7V
  1 LA7V170T521-TCP
  2 LA7V521-TCP-RECV
CHOOSE 1-2: 1
NAME: LA7V170T521-TCP//<RET>
LLP TYPE: TCP//<RET>
MAIL GROUP: ^TCP
  1 TCP/IP ADDRESS
  2 TCP/IP PORT
CHOOSE 1-2: 1
TCP/IP ADDRESS: 152.132.124.142 [Note: This is the outgoing IP address]
TCP/IP PORT: 5003 [Note: This is the outgoing IP port]
CLIENT/SERVER: C CLIENT
PERMANENT: <RET>
RECORD SEPARATOR: <RET>
Select STATION: <RET>
Select HL LOWER LEVEL PROTOCOL PARAMETER NAME: LA7V
  1 LA7V170T521-TCP
  2 LA7V521-TCP-RECV
CHOOSE 1-2: 2
NAME: LA7V521-TCP-RECV//<RET>
LLP TYPE: TCP//<RET>
MAIL GROUP: ?
  1 TCP/IP ADDRESS
  2 TCP/IP PORT
CHOOSE 1-2: 1
TCP/IP ADDRESS: 152.130.1.7 [NOTE: This is your local IP address]
TCP/IP PORT: 5002 [NOTE: This is a local IP port suggested range is 5000-5999]

CLIENT/SERVER: S SERVER
PERMANENT: <RET>
RECORD SEPARATOR: <RET>
Select STATION: <RET>
```

1b. MailMan Interfaces

Example: Editing the MAIL GROUP file (#3.8) entries in the screen displays are based on the set up between these two facilities. This is an example **ONLY**.

```
Select VA FileMan OPTION: ENTER OR EDIT FILE ENTRIES

INPUT TO WHAT FILE: MAIL GROUP
EDIT WHICH FIELD: ALL// MEMBERS - REMOTE (multiple)
  EDIT WHICH MEMBERS - REMOTE SUB-FIELD: ALL//<RET>
THEN EDIT FIELD: <RET>

Select MAIL GROUP NAME: LA7V 170 [NOTE: Enter the Mail Group created for
your LEDI partner]
Select REMOTE MEMBERS: S.HL V16 SERVER@ISC-DALLAS.VA.GOV [NOTE: Enter your
LEDI partners Domain]

  Are you adding 'S.HL V16 SERVER@ISC-DALLAS.VA.GOV' as
  a new MEMBERS - REMOTE (the 1ST for this MAIL GROUP)? No// Y (Yes)

Select REMOTE MEMBERS: ^
```

2. Select the HL7 Main Menu to start the LLP's

```
Select V1.6 OPTIONS Option: 1 Communications Server

Select Communications Server Option: 6 Systems Link Monitor
                                MESSAGING MONITOR
```

NODE	MESSAGES RECEIVED	MESSAGES PROCESSED	MESSAGES TO SEND	MESSAGES SENT	DEVICE ON-LINE	STATE
LA7V 170			2	2	Y	IDLE
LA7V 521	2	2			Y	READING

```

Number of incoming filers running => Zero
Number of outgoing filers running => Zero

TYPE: (N) NEXT, (B) BACKUP, (Q) QUIT: Q
```

NOTE: MailMan Interfaces utilizes **only one** Lower Level Protocol.

Select Communications Server Option: **4** Start LLP

This option is used to launch the lower level protocol for the appropriate device. Please select the node with which you want to communicate.

Select HL LOGICAL LINK NODE: LAV7 170 [**Note:** Enter your HOST facility logical link]

Select one of the following:

F	FOREGROUND
B	BACKGROUND
Q	QUIT

Method for running the receiver: B// <RET> ACKGROUND
Job was queued as 437894.

Select Communications Server Option: **4** Start LLP

This option is used to launch the lower level protocol for the appropriate device. Please select the node with which you want to communicate

Select HL LOGICAL LINK NODE: LA7V 521 [**NOTE:** Enter your COLLECTION facility logical link]

Select one of the following:

F	FOREGROUND
B	BACKGROUND
Q	QUIT

Method for running the receiver: B// <RET> ACKGROUND
Job was queued as 437895.

Select Communications Server Option:<RET>

Select V1.6 OPTIONS Option: **Communications Server**

Select Communications Server Option: **2** Manage incoming & outgoing filers

Select Manage incoming & outgoing filers Option: **1** Start default number of incoming & outgoing filers

Incoming filer queued as task number 437971

Outgoing filer queued as task number 437972

Select Manage incoming & outgoing filers Option:<RET>

Once the LLP's are started the interface should be ready to send and receive lab orders and results.

Protocols/Mail Groups

This chart identifies the protocols and mail groups that were created for the HL7 environment.

The LA7V is the name space, **X** and **Y** are the primary site numbers.

Host Setup			Collection Setup	
Application:	LAV7 HOST X	LAV7 REMOTE Y	LAV7 HOST X	LAV7 REMOTE Y
Servers:	LAV7 Results Reporting to Y	LAV7 Receive Order from Y	LAV7 Receive Results from X	LAV7 Order from X
		LAV7 Receive Query from Y		LAV7 Query for Results from X
Clients:	LAV7 Process Order from Y	LAV7 Send Results to Y	LAV7 Send Order to X	LAV7 Process Results from X
	LAV7 Query Response to Y		LAV7 Send Query to X	
MailMan Interface				
	Client	Server	Client	Server
Mail group	LA7V X (Members include S.HL V16 SERVER@remote domain)		LA7V Y (Members include S.HL V16 SERVER@host domain)	
HL LLP	LA7V X		LA7V Y	
HL LL	LA7V X (Client)		LA7V Y (Client)	
TCP/IP Interface				
	Client	Server	Client	Server
HL LLP	LA7VX2Y-TCP	LA7VY-TCP-RECV	LA7V X2Y-TCP	LA7VY-TCP-RECV
HL LL	LA7V Y	LA7V X	LA7V X	LA7V Y

Glossary

The following glossary of terms is related to the LEDI software application.

Data Fields	The information base associated with a segment.
Data Type (DT)	Restrictions on the contents of the data field as defined by the HL7 Standard.
Element Name	Globally unique descriptive name for the field.
Length (LEN)	The maximum number of characters that one occurrence of the data field may occupy.
Optionally (R/O/C)	Whether the data field is required, optional, or conditional in a segment. The designations are: R - required; O (null) - optional; and C - conditional on the trigger event.
Repetition (RP/#)	Whether the field may repeat. The designations are: N (null) - for no repetition allowed; Y - the field may repeat an indefinite or site determined number of times; and (integer) - the field may repeat up to the number of times specified in the integer.
Sequence Number (SEQ)	The ordinal position of the data field within the segment. This number is used to refer to the data field in the text comments that follow the segment definition table.
Table (TBL#)	This is a table of values that may be defined by HL7 or negotiated between the VISTA Laboratory application and the vendor system.

Collection facility	The laboratory that collects the patient's specimen. After the specimen is collected, the Collection facility should: • create an electronic Shipping Manifest (specifying the lab tests to be performed by the Host facility laboratory) • transmit the Shipping Manifest List to the Host facility laboratory • transport the specimen by carrier to the Host facility laboratory
Electronic Catalog	The new Electronic Catalog contains laboratory test available for the collection site to order.
Host facility	The laboratory that receives the patient's specimen and the electronic Shipping Manifest List (transmitted by the Collection facility laboratory) The Host facility performs the following steps: • bar codes the specimen arrival • performs the specified lab test • verifies the lab test results • transmits the lab test results back to the Collection facility
LEDI	Laboratory Electronic Data Interchange
NHE	Network Health Exchange
NLT	National Lab Test
PID	Patient Identification
Segments	A logical grouping of data fields.
Shipping Manifest	The shipping manifest is a printout list of lab specimens sent outside the facility to a reference lab for processing.

TCP/IP	Transmission Communication Protocol/Internet Protocol
Trading Partners	An established relationship between two or more laboratories for receiving and processing lab specimens.
UI	Universal Interface
UID	Unique Identifier
VISTA Laboratory UI and LEDI HL7 Interface Standard Specifications V. 1.1	This document specifies an interface to the Veterans Health Information Systems and Technology Architecture (VISTA) Laboratory software application based upon the Health Level Seven (HL7) Standard. This interface forms the basis for the exchange of healthcare information between the VISTA Laboratory software application and all non- VISTA systems. Especially those non- VISTA systems that generate laboratory result information.
Workload System	This is a method of tracking number of LEDI specimens processed.

Appendix

This section contains tables, examples, and other references that may be helpful with the utilization of the LEDI software application.

VISTA Laboratory UI and LEDI HL7 Interface Standard Specifications V. 1.1

1. Purpose

This document specifies an interface to the Veterans Health Information Systems and Technology Architecture (**VISTA**) Laboratory software application based upon the Health Level Seven (HL7) Standard. This interface forms the basis for the exchange of healthcare information between the **VISTA** Laboratory software application and all non-**VISTA** systems, especially those non-**VISTA** systems that generate laboratory result information.

2. Overview

2.1 Statement of Intent

The Chief Information Office Field Office developed and implemented a generic interface to the HL7 Standard for use by the **VISTA** Laboratory application in communicating with non-**VISTA** systems to exchange healthcare information. The interface strictly adheres to the HL7 Standard and avoids using “Z” type extensions to the Standard wherever possible. This interface specification is subject to modification and revision to incorporate changes, improvements, and enhancements. Later versions may support additional functionality of the current HL7 V. 2.3 Standard and new functionality released in future versions of the HL7 Standard.

2.2 Scope

This document describes messages transmitted between the **VISTA** Laboratory application and a non- **VISTA** automated system. The purpose of these messages is to exchange information concerning laboratory results, specifically for test order and reports.

3. General Specifications

3.1 Communication Protocol

The HL7 Standard defines only the seventh level of the Open System Inter-connect (OSI) protocol. This is the application level. Levels one through six involve primarily communication protocols. The HL7 Standard provides some guidance in this area. The communication Standard used for interfacing with the **VISTA** Laboratory package is based on the HL7 Hybrid Lower Level Standard described in the HL7 Interface Standard document.

3.2 Application Processing Rules

The HL7 Standard describes the basic rules for application processing by the sending and receiving systems. Information contained in the Standard is not repeated here. Anyone wishing to interface with the **VISTA** Laboratory package should become familiar with the HL7 Standard V. 2.3.

3.3 Messages

ACK	General Acknowledgment
ORM	Order
ORU	Observational Results Unsolicited

3.4 Segments

Refer to section 4, Transaction Specifications, for details and examples of all segments used to interface with **VISTA** Laboratory software application. The following HL7 segments are used to support the exchange of Laboratory information.

MSA	Message Acknowledgment
MSH	Message Header
NTE	Notes and Comment
OBR	Observation Request
OBX	Observation
ORC	Common Order
PID	Patient Identification
PV1	Patient Visit

3.5 Fields

The segment definition tables list and describe the data fields in the segment and characteristics of their usage. The following information is specified about each data field.

Sequence Number (SEQ): The ordinal position of the data field within the segment. This number is used to refer to the data field in the text comments that follow the segment definition table.

Length (LEN): The maximum number of characters that one occurrence of the data field may occupy.

Data Type (DT): Restrictions on the contents of the data field as defined by the HL7 Standard.

Optionally (R/O/C): Whether the data field is required, optional, or conditional in a segment. The designations are: R - required; O (null) - optional; and C - conditional on the trigger event.

Repetition (RP/#): Whether the field may repeat. The designations are: N (null) - for no repetition allowed; Y - the field may repeat an indefinite or site determined number of times; and (integer) - the field may repeat up to the number of times specified in the integer.

Table (TBL#): A table of values which may be defined by HL7 or negotiated between the **VISTA** Laboratory application and the vendor system.

Element Name: Globally unique descriptive name for the field.

The following HL7 segment fields are used to support the exchange of Laboratory data for each of the segments listed in paragraph 3.4. Tables referenced in the segments can be found in the HL7 Interface Standards document. For the standard HL7 segments, definitions of each element are provided for those fields which are utilized. The field definitions can include specific information (e.g., expected format) for transmission.

3.5.1 3.5.1. Segment: MSA - Message Acknowledgment

The MSA segment contains information sent while acknowledging another message.

SEQ	LEN	DT	R/O/C	RP/#	TBL#	ELEMENT NAME
1	2	ID	R		8	ACKNOWLEDGMENT CODE
2	20	ST	R			MESSAGE CONTROL ID
3	80	ST				TEXT MESSAGE

3.5.1.0. MSA field definitions

3.5.1.1. ACKNOWLEDGMENT CODE (ID)

The ACKNOWLEDGMENT CODE can have the following values:

HL7 Table 8 ACKNOWLEDGMENT CODE

Value	Description
AA	Application Accept
AE	Application Error
AR	Application Reject

3.5.1.2. MESSAGE CONTROL ID (ST)

This field identifies the message sent by the sending system. It allows the sending system to associate this response with the message for which it is intended.

3.5.1.3. TEXT MESSAGE (ST)

This is an optional text field that further describes an error condition. The text may be printed in error logs or presented to an end user.

3.5.2. Segment: MSH - Message Header

The MSH segment defines the intent, source, destination, and some specifics of the syntax of a message.

SEQ	LEN	DT	R/O/C	RP/#	TBL#	ELEMENT NAME
1	1	ST	R			FIELD SEPARATOR
2	4	ST	R			ENCODING CHARACTERS
3	15	ST				SENDING APPLICATION
4	20	ST				SENDING FACILITY
5	30	ST				RECEIVING APPLICATION
6	30	ST				RECEIVING FACILITY
7	26	TS				DATE/TIME OF MESSAGE
8	40	ST				SECURITY
9	7	CM	R		76	MESSAGE TYPE
10	20	ST	R			MESSAGE CONTROL ID
11	1	ID	R		103	PROCESSING ID
12	8	ID	R		104	VERSION ID
15	2	ID			155	ACCEPT ACKNOWLEDGMENT TYPE
16	2	ID			155	APPLICATION ACKNOWLEDGMENT TYPE

3.5.2.0. MSH field definitions

3.5.2.1. FIELD SEPARATOR (ST)

This field is the separator between the segment ID and the first real field, MSH-2-ENCODING CHARACTERS. It serves as the separator and defines the character to be used as a separator for the rest of the message.

3.5.2.2. ENCODING CHARACTERS (ST)

This field is four characters in the following order: The component separator, repetition separator, escape character, and sub-component separator.

3.5.2.3. SENDING APPLICATION (ST)

This field is used for interfacing with lower level protocols.

Generic Interface Manager (GIM)

LA AUTO INST to identify the **VISTA** Laboratory application.

LAB INTERFACE to identify the receiving applications.

Lab Electronic Data Interface (LEDI)

LA7V REMOTE # to identify the remote, ordering, and site.

LA7V HOST # to identify the HOST, testing, and site.

The character '#' represents the VA station number (from INSTITUTION file (#4) Station Number field (#99)).

3.5.2.4. SENDING FACILITY (ST)

GIM

Generic Interface Manager will identify the instrument manager.

The three digit number identifying the medical center division, as found in the **VISTA** INSTITUTION file (#4), Station Number field (#99).

LEDI

This field addresses one of several occurrences of the same application within the sending system. This field is the three digit number identifying the medical center division, as found in the **VISTA** INSTITUTION file (#4), Station Number field (#99).

3.5.2.5. RECEIVING APPLICATION (ST)

Same as sending application.

3.5.2.6. RECEIVING FACILITY (ST)

Same as sending facility.

3.5.2.7. DATE/TIME OF MESSAGE (TS)

This field is the date/time that the sending system created the message. If the time zone is specified, it is used throughout the message as the default time zone.

3.5.2.8. SECURITY (ST)

In some applications of HL7 this field is used to implement security features. Its use is not yet further specified.

3.5.2.9. MESSAGE TYPE (CM)

MESSAGE TYPE is a composite element made up of the following:

<message type> <trigger event>

The first component is the message type, found in Table 76 - MESSAGE TYPE.

The second component is the trigger event code found in Table 3 - EVENT TYPE CODE.

The receiving system uses this field to know the data segments to recognize, and possibly the application to which to route this message.

UI:

Does not currently use the event type code.

LEDI:

Requires the event type code.

3.5.2.10. MESSAGE CONTROL ID (ST)

This field is a number or other identifier that uniquely identifies the message. The receiving system echoes this ID back to the sending system in the Message Acknowledgment segment (MSA).

3.5.2.11. PROCESSING ID (ID)

This field is used to decide whether to process the message as defined in the HL7 application processing rules.

HL7 Table 103 PROCESSING ID

Value	Description
D	Debugging
P	Production
T	Training

3.5.2.12. VERSION ID (ID)

This field is matched by the receiving system to its own version to be sure the message is interpreted correctly. Only the following values are expected/accepted. LEDI uses and requires V. 2.3.

HL7 Table 104 VERSION ID

Value	Description
2.1	Released 2.1 March 1990
2.2	Released 2.2 December 1994
2.3	Released 2.3 May 1997

3.5.2.15 ACCEPT ACKNOWLEDGMENT TYPE (ID)

This field defines the conditions under which accept acknowledgments are required to be returned in response to this message.

HL7 Table 155 ACCEPT/APPLICATION ACKNOWLEDGMENT CONDITIONS

Value	Description
AL	Always
NE	Never
ER	Error/reject conditions only
SU	Successful completion only

3.5.2.16. APPLICATION ACKNOWLEDGMENT TYPE (ID)

This field defines the conditions under which application acknowledgments are required to be returned in response to this message.

HL7 Table 155 ACCEPT/APPLICATION ACKNOWLEDGMENT CONDITIONS

Value	Description
AL	Always
NE	Never
ER	Error/reject conditions only
SU	Successful completion only

3.5.3. Segment. NTE - Laboratory Notes and Comments

The NTE segment is used to report the Laboratory notes or comments.

SEQ	LEN	DT	R/O/C	RP/#	TBL#	ELEMENT NAME
1	4	SI				SET ID - NOTES AND COMMENTS
3	80	FT		Y		COMMENT

3.5.3.0. NTE field definitions

3.5.3.1. SET ID - NOTES AND COMMENTS (SI)

This field may be used where multiple NTE segments are included in a message.

3.5.3.3. COMMENT (FT)

This field contains the comment. The comment should contain the name of the facility that did the testing. This information will be stored in LAB DATA file (#63), CHEM, HEM, TOX, RIA, SER, etc. Subfile (#63.04), Comment field (#.99).

3.5.4. Segment: OBR - Observation Request

In the reporting of clinical data, the OBR serves as the report header. It identifies the observation set represented by the following observations.

SEQ	LEN	DT	R/O/C	RP/#	TBL#	ELEMENT NAME
1	4	SI	C			SET ID - OBSERVATION REQUEST
2	75	CM	C			PLACER ORDER NUMBER
3	75	CM	R			FILLER ORDER NUMBER
4	200	CE	R			UNIVERSAL SERVICE ID
7	26	TS	C			OBSERVATION DATE/TIME
8	26	TS	C			OBSERVATION END DATE/TIME
9	20	CQ				COLLECTION VOLUME
12	60	CE				DANGER CODE
13	300	ST	C			RELEVANT CLINICAL INFO
14	26	TS				SPECIMEN RECEIVED DATE/TIME
15	300	CM			0070	SPECIMEN SOURCE
16	60	CN		Y		ORDERING PROVIDER
18	60	ST				PLACER FIELD #1
19	60	ST				PLACER FIELD #2
22	26	TS				RESULTS RPT/STATUS CHNG - D/T
27	200	TQ		Y		QUANTITY/TIMING

3.5.4.0. OBR field definitions

3.5.4.1. SET ID - OBSERVATION REQUEST (SI)

SET ID - OBSERVATION REQUEST is a sequence number. For the first order transmitted, the sequence number is 1; for the second order, it is 2; and so on.

3.5.4.2. PLACER ORDER NUMBER (CM)

PLACER ORDER NUMBER is a composite element made up of the following:

<unique filler ID> <filler application ID>

This field is a permanent identifier for an order and its associated observations. Currently the first component is filled in with the **VISTA** unique accession number. This number is carried throughout the **VISTA** testing cycle and returned with the results.

If this filler ID is truly unique then it can be used within the **VISTA** system as the unique accession number, however if it is not unique then the specimen will need to be re-labeled with a unique accession number. However, the original accession number will still need to be returned with the result so the results will be posted to the right accession at the collection facility.

3.5.4.3 FILLER ORDER NUMBER (CM)

FILLER ORDER NUMBER is a composite element made up of the following:

<unique filler ID> <filler application ID>

This field is a permanent identifier for an order and its associated observations on the fillers system. Currently the first component is filled in with the **VISTA** unique accession number. This number is then returned with the results.

3.5.4.4. UNIVERSAL SERVICE ID (CE)

UNIVERSAL SERVICE ID is a coded element made up of the following:

<identifier> <text> <name of coding system> <alternate identifier> <alternate text>
<name of alternate coding system>

This field is an identifier code for the observation or ordered test. This can be based on local and/or universal codes.

The WKLD CODE file (#64) is used to identify the observed test.

UI:

NOTE: Internal Entry Number (IEN).

<UI test code>^<text>^<99001>^<IEN File #60>^<text>^<99002>

LEDI:

<UI test code/NLT code File #64 Field #1>^<text>^<99VA64>^<alt id>^<text>^<alt code scheme>

3.5.4.7. OBSERVATION DATE/TIME (TS)

The OBSERVATION DATE/TIME is the clinically relevant date/time of the observation. This is the actual date and time of the specimen collection. This data is pulled from the ACCESSION file (#68), ACCESSION NUMBER sub-file (#68.02), Draw Time field (#9).

3.5.4.8. OBSERVATION END DATE/TIME (TS)

The OBSERVATION END DATE/TIME is the end date and time of a study or timed specimen collection. This is the actual end date and time of the specimen collection. (No fields in the **VISTA** lab package for this information.)

3.5.4.9. COLLECTION VOLUME

The COLLECTION VOLUME is the volume of the collection specimen.

3.5.4.12. DANGER CODE

The DANGER CODE will contain the information located within the LAB DATA file (#63) PAT. INFO. field (#.091).

3.5.4.13. RELEVANT CLINICAL INFO

The RELEVANT CLINICAL INFO will contain the information located within the Specimen Comments field (#13.6) of the ACCESSION file (#68), DATE subfile (#68.01), and ACCESSION NUMBER subfile (#68.02)

3.5.4.14. SPECIMEN RECEIVED DATE/TIME

The SPECIMEN RECEIVED DATE/TIME is the actual time of a specimen at the diagnostic service.

3.5.4.15. SPECIMEN SOURCE

The SPECIMEN SOURCE will contain the information on the specimen source.

Components: <specimen source name or code (CE)>^<free text>^<0070>^<>^<>

The specimen source component will contain three components:
<code from 0070>^<text>^<0070>

The entries in Table 0070 are mapped to one specific entry in the LAB ELECTRONIC CODES file (#64.061). Duplicate codes will need to be negotiated. The free text will contain the free text collection sample from the **VISTA** COLLECTION SAMPLE file (#62).

3.5.4.16. ORDERING PROVIDER (CN)

ORDERING PROVIDER is a composite ID number and name made up of the following:

<id number> <family name> <given name> <middle initial or name> <suffix>
<prefix> <degree> <source table >

This field identifies the provider who ordered the test. The ID code and the name may be present.

3.5.4.18. Placer field (#1) (ST)

The Placer field (#1) contains vital information for the processing of incoming results. The field contains the name of the auto-instrument from the AUTO INSTRUMENT file (#62.4), Name field (#.01).

The data should be passed in the following format:

<Name of Analyzer or Instrument>^<Card Address>

3.5.4.19. Placer field (#2) (ST)

The Placer field (#2) contains vital information for linking the incoming result with the original order. The data should be passed in the following format:

<Tray>^<Cup>^<Accession Area>^<Accession Date>^
<Accession Number>^<Accession>^<Universal ID>^<Sequence Number>

All components are optional except the Universal ID which should match with the PLACER ORDER NUMBER.

3.5.10.22 3.5.4.22. RESULTS REPORT/STATUS CHANGE - DATE/TIME (TS)

The RESULTS REPORT/STATUS CHANGE - DATE/TIME contains the date and time the report is released.

3.5.4.27. QUANTITY/TIMING

The QUANTITY/TIMING contains the information concerning the timing and urgency of certain tests.

3.5.5. Segment: OBX - Observation

The OBX segment is used to transmit a single observation or observation fragment.

SEQ	LEN	DT	R/O/C	RP/#	TBL#	ELEMENT NAME
1	4	SI				SET ID - OBSERVATION SIMPLE
2	2	ID	R		125	VALUE TYPE
3	80	CE	R			OBSERVATION IDENTIFIER
5	var	ST				OBSERVATION VALUE
6	60	CE				UNITS
7	60	ST				REFERENCE RANGES
8	10	ID			0078	ABNORMAL FLAGS
11	2	ID	R		85	OBSERV RESULT STATUS
14	26	TS				DATE/TIME OF THE OBSERVATION
15	60	CN				PRODUCER'S ID
16	60	CN				RESPONSIBLE OBSERVER

3.5.5.0. OBX field definitions

3.5.5.1. SET ID - OBSERVATION SIMPLE (SI)

SET ID - OBSERVATION SIMPLE is a sequence number used to identify the segment repetitions.

3.5.5.2. VALUE TYPE (ID)

This field is the format of the observation value in OBX.

Although there are other entries in the HL7 table, only the following values are transmitted.

HL7 Table 125 VALUE TYPE

Value	Description
TX	Text

3.5.5.3. OBSERVATION IDENTIFIER (CE)

OBSERVATION IDENTIFIER is a coded element made up of the following:

<NLT or WKLD CODE> <text> <99VA64> <alternate identifier> <alternate text>
<name of alternate coding system>

This field is a unique identifier for the observation test results. The results codes are stored in the WKLD CODE file (#64), WKLD Code field (#1). Each test result in the LABORATORY TEST file (#60) is mapped using the Result NLT Code field (#64.1) to a national test code in the WKLD CODE file (#64). The result message is passed using the NLT or WKLD code and is linked at the REMOTE system using the UI Test Code field (#6) in the AUTO INSTRUMENT file (#62.4).

3.5.5.5 OBSERVATION VALUE (ST)

This field is the value observed by the observation producer. The length of this field is variable, depending upon the value type.

3.5.5.6. UNITS (CE)

UNITS is a coded element made up of the following:

<identifier> <text> <name of coding system>

The default coding system for UNITS consists of the ISO abbreviations as defined in section 7.1.4 of the HL7 Standard V. 2.2. The identifier field is the only field being used at this time.

3.5.5.7. REFERENCE RANGE (ST)

The REFERENCE RANGE will contain the identified range for this specific result.

3.5.11.8 3.5.5.8. ABNORMAL FLAG (ID)

The ABNORMAL FLAG will contain the entries identified by table 0078.

HL7 Table 78 VALUE TYPE

Value	Description
L	Below low normal
H	Above high normal
LL	Below lower panic limits
HH	Above upper panic limits
N	Normal

3.5.5.11. OBSERV RESULT STATUS (ID)

This field reflects the current completion status of the results for one OBSERVATION IDENTIFIER.

**HL7 Table 85 - OBSERVATION RESULT STATUS CODES
INTERPRETATION**

Value	Description
F	Final results; can only be changed with a corrected result
S	Partial results

3.5.5.14. DATE/TIME OF THE OBSERVATION (TS)

The observation date-time is the physiologically relevant date-time or the closest approximation to that date-time. In the case of observations taken directly on the patient, the observation date-time is the date-time that the observation is performed.

3.5.5.16. RESPONSIBLE OBSERVER (CN)

RESPONSIBLE OBSERVER is a composite ID number and name made up of the following:

<id number> <family name> <given name> <middle initial or name>
<suffix> <prefix> <degree> <source table ID>

This field identifies the person responsible for the observation (i.e., the person who either performed or verified it).

3.5.6 Segment: ORC - Common Order

The ORC segment is used by all applications as the primary means of communicating specific lab order information. This segment contains data items that are common to all orders.

SEQ	LEN	DT	R/O/C	RP/#	TBL#	ELEMENT NAME
1	4	SI	R		0119	ORDER CONTROL
2	75	CM	C			PLACER ORDER NUMBER
3	75	CM	C			FILLER ORDER NUMBER
4	75	CM				PLACER GROUP NUMBER
12	80	CN				ORDERING PROVIDER

3.5.6.0 ORC field definitions

3.5.6.1 ORDER CONTROL (SI)

ORDER CONTROL is the value that determines the function of the order segment. The contents is hard coded with “NW” for order messages and “CN” for result messages.

3.5.6.2 PLACER ORDER NUMBER (CM)

PLACER ORDER NUMBER is the placer application’s order number which should be returned with the result message.

Components : <unique placer ID>^<placer application ID>

The Universal Interface (UI) uses Order # field (#14), within the ACCESSION NUMBER subfile (#68.02), multiple of the ACCESSION file (#68).

The Laboratory Electronic Data Interchange software uses the newly created Ordering Site UID field (#16.4) within the DATE subfile (#68.01), ACCESSION NUMBER subfile (#68.02), multiple of the ACCESSION file (#68). If possible this field should be echoed back with the ORR and ORU messages.

3.5.3. FILLER ORDER NUMBER (CM)

FILLER ORDER NUMBER is the filler application's order number.
Components : <unique placer ID>^<placer application ID>

The Laboratory Electronic Data Interchange software uses the newly created HOST UID field (#16.3) within the DATE Subfile (#68.01) and ACCESSION NUMBER subfile (#68.02) of the ACCESSION file (#68). If possible this field should be echoed back with the ORR and ORU messages.

3.5.4. PLACER GROUP NUMBER (CM)

PLACER GROUP NUMBER is the placer application's group number for a specific shipment of lab orders.

Components: <unique placer ID>^<placer application ID>

The Laboratory Electronic Data Interchange software uses the Invoice field (#.01) within the LAB SHIPPING MANIFEST file (#62.8) to uniquely identify a specific shipment of lab orders. This field is also used for updates to the LAB SHIPPING MANIFEST file (#62.8). If possible this field should be echoed back in the ORR and ORU messages.

3.5.12. ORDERING PROVIDER (CN)

ORDERING PROVIDER is the person who is responsible for creating the request. The sequence is in the standard HL7 Composite Name format.

3.5.7. Segment: PID - Patient Identification

The PID segment is used by all applications as the primary means of communicating patient identification information. This segment contains permanent patient identifying, and demographic information that is not likely to change frequently.

SEQ	LEN	DT	R/O/C	RP/#	TBL#	ELEMENT NAME
1	4	SI				SET ID - PATIENT ID
3	20	CM	R	Y		PATIENT ID (INTERNAL ID)
4	12	ST				ALTERNATE PATIENT ID
5	48	PN	R			PATIENT NAME
6	30	ST				MOTHER'S MAIDEN NAME
7	8	DT				DATE OF BIRTH
8	1	ID			1	SEX
11	106	AD		Y		PATIENT ADDRESS
13	40	TN		Y		PHONE NUMBER - HOME
16	1	ID			2	MARITAL STATUS
19	16	ST				SSN NUMBER - PATIENT

3.5.7.0. PID field definitions

3.5.7.1. SET ID - PATIENT ID (SI)

SET ID - PATIENT ID is a sequence number used to identify the segment repetitions.

3.5.7.3. PATIENT ID (INTERNAL ID) (CM)

PATIENT ID (INTERNAL ID) is a composite element made up of the following:
 <patient ID> <check digit> <check digit scheme> <assigning facility ID> <type>

3.5.7.4. ALTERNATE PATIENT ID (ST)

This field contains an alternate identification number.

3.5.7.5. PATIENT NAME (PN)

The Patient Name field is in standard HL7 format.

3.5.7.6 MOTHER'S MAIDEN NAME (ST)

This field is the family name under which the mother was born. It is used to disambiguate patients with the same last name.

3.5.7.7 DATE OF BIRTH (DT)

This field is the patient's date of birth.

3.5.7.8 SEX (ID)

This field is the patient's sex. Although there are other entries in the HL7 table, only the following values are transmitted.

HL7 Table 1 - SEX

Value	Description
F	Female
M	Male

3.5.7.11 PATIENT ADDRESS (AD)

This field is the mailing address of the patient.

3.5.7.13 PHONE NUMBER - HOME (TN)

This field is the patient's home phone number.

3.5.7.16 MARITAL STATUS (ID)

This field is the patient's marital status. These entries correspond to the **VISTA** MARITAL STATUS file (#11).

HL7 (user defined) Table 2 MARITAL STATUS

Value	Description
S	Separated
D	Divorced
M	Married
N	Never Married
W	Widow/Widower
U	Unknown

3.5.7.19 SSN NUMBER - PATIENT (ST)

This field is the patient's social security number.

3.5.8 Segment: PV1 - Patient Visit

The PV1 segment is used to communicate information on a visit specific basis.

SEQ	LEN	DT	R/O/C	RP/#	TBL#	ELEMENT NAME
1	4	SI				SET ID - PATIENT VISIT
2	1	ID	R		0004	PATIENT CLASS
3	12	CM				ASSIGNED PATIENT LOCATION

3.5.8.0 PV1 field definitions

3.5.8.1 SET ID - PATIENT VISIT (SI)

SET ID - PATIENT VISIT is the number uniquely identifying this transaction.

3.5.8.2 PATIENT CLASS (ID)

PATIENT CLASS is the field that categorizes the patient by site.

3.5.8.3 ASSIGNED PATIENT LOCATION (CM)

The Universal Interface (UI) uses the Report Routing Location field (#6) within the DATE subfile (#68.01) and ACCESSION NUMBER subfile (#68.02), of the ACCESSION file (#68).

4. Transaction Specifications

4.1 General

4.2 Specific Transactions

A. Order Message

ORM	General Order Message
MSH	Message Header
{ PID	Patient Identification
{	
[PV1]	Patient Visit
{ ORC	Common Order
OBR	Observations Report ID
}	

Example:

```
MSH^~|\&^LA7V REMOTE 521^521^LA7V HOST
170^170^19970515092936^^ORM~001^15162^P^2.3^^^^^
PID^1^^96~4~M11^^PATIENT~TEST~ONE^^19550304^M^^^^^^^^^^^^^382486202
PV1^1^^1E
ORC^NW^3471350001^^521-97135-1^^^^^19970515^^^TEST~TEST^^^^^^^^^^^^^^^^^
OBR^1^3471350001^^84330.0000~Glucose
Quant~99VA64~175~GLUCOSE~99VA60^^^19970515083909 ^^^^^^^^SER&SERUM&0070~~BLOOD
~~^^^LA7V HOST 170^~~11~2970515~1~CH 0515 1~3471350001^^^^^^^^^~~~~ROUTINE
```

B. Message Acknowledgment

Upon receipt of the order message, the **VISTA** Laboratory system responds with a (ORR) Order response message. The ORR order response message consists of the following segments:

ORR	Order Response Message
MSH	Message Header
MSA	Message Acknowledgment

Example:

```
MSH^~|\&^LA7V HOST 170^170^LA7V REMOTE
521^521^19970515093728^^ORR~001^269^P^2.3^^^^^
MSA^AA^15162
```

C. Result Message

ORU	Observational Results Unsolicited Message
MSH	Message Header
{ [PID]	Patient Identification
{ [ORC]	Order Common
OBR	Observations Report ID
{[NTE]}	Laboratory Note or Comment
{[OBX]}	Observation Segment
}	
}	

Example:

```
MSH^~|\&^LA7V HOST 170^170^LA7V REMOTE
521^521^19970509095056^^ORU~R01^229^P^2.3^^^^^
PID^1^^29~0~M11^^PATIENT~TEST~ONE^^2000^67
ORC^CN^3471070001^^521-97135-1^^^^^19970515^^^^TEST~TEST^^^^^^^^^^^^^^^^^
OBR^1^3471070001^0471070003^83735.0000~Magnesium~99VA64^^^19970417095353
^^^^^^19970417095353^SER~^^^LA7V HOST
170^~~~~~3471070001^^^19970417133846^^^^^
NTE^1^^This Magnesium was performed at REGION 7 ISC,TX (DEMO)
OBX^1^TX^83735.0000~Magnesium~99VA64^^1.5^mg/dL^2-2.6^L^^^
```

D. Message Acknowledgment

Upon receipt of the order message, the **VISTA** Laboratory system responds with a general acknowledgment (ACK) message. The ACK message consists of the following segments.

ACK	General Acknowledgment Message
MSH	Message Header
MSA	Message Acknowledgment

Example:

```
MSH^~|\&^LA7V HOST 170^170^LA7V REMOTE
521^521^19970515093728^^ACK~R01^269^P^2.3^^^^^
MSA^AA^229
```

VISTA HL7 Setup

The following is an example of the Protocol created for the **VISTA** HL7 setup:

Example: Host Lab (Facility 170)

Protocols

Server Protocols For

LA7V HOST 170

(1) LA7V Results Reporting to 521

```

Text:
Package:
  Message Type Rcvd: ORU
  <DEFAULT>
  Event Type Rcvd: R01
  <DEFAULT>
    Priority: IMMEDIATE
    Processing ID: PRODUCTION
    Version ID: 2.3
    Entry Action: <NONE>
    Exit Action: <NONE>
  Process ACK Routine: D ACK^LA7VMSG
  Subscribers: LA7V Send Results to 521
  Accept Acknowledgment:
  Application Acknowledgment:

```

Client Protocols For

LA7V REMOTE 521

(1) LA7V Send Results to 521

```

Text:
Package:
  Message Type Rcvd: ACK
  Message Type Sent: ORU
  Event Type Rcvd/Sent: R01
  Priority: IMMEDIATE
  <DEFAULT>
    Processing ID: PRODUCTION
    Version ID: 2.3
    Entry Action: <NONE>
    Exit Action: <NONE>
  Process Routine: Q
  Sending Facility Required: NO
  Receiving Facility Required: NO
  Date/Time of Message Required: YES
  Security Required:
  Logical Link: LA7V 521

```

Client Protocols For

LA7V HOST 170

(1) LA7V Process Order from 521

```

Text:
Package:
  Message Type Rcvd: ORM
  <DEFAULT>
  Message Type Sent: ORR
  <DEFAULT>
  Event Type Rcvd/Sent: 001
  <DEFAULT>
    Priority: IMMEDIATE
    <DEFAULT>
    Processing ID: PRODUCTION
    Version ID: 2.3
  Sending Facility Required:
  Receiving Facility Required:
  Date/Time of Message Required:
  Security Required:
  Logical Link: LA7V 521

```

Appendix

Entry Action: <NONE>
Exit Action: <NONE>
Process Routine: D IN^LA7VORM

(2) LA7V Query Response to 521

Text:
Package:
Message Type Rcvd: ACK Sending Facility Required:
<DEFAULT>
Message Type Sent: QRY Receiving Facility Required:
<DEFAULT>
Event Type Rcvd/Sent: R02 Date/Time of Message Required:
<DEFAULT>
Priority: IMMEDIATE Security Required:
<DEFAULT>
Processing ID: PRODUCTION Logical Link: LA7V 521
Version ID: 2.3
Entry Action: <NONE>
Exit Action: <NONE>
Process Routine: Q

Server Protocols For

LA7V REMOTE 521

(1) LA7V Receive Query from 521

Text:
Package:
Message Type Rcvd: ACK Accept Acknowledgment:
<DEFAULT>
Event Type Rcvd: R02 Application Acknowledgment:
<DEFAULT>
Priority: IMMEDIATE
Processing ID: PRODUCTION
Version ID: 2.3
Entry Action: <NONE>
Exit Action: <NONE>
Process ACK Routine: Q
Subscribers: LA7V Query Response to 521

(2) LA7V Receive Order from 521

Text:
Package:
Message Type Rcvd: ORM Accept Acknowledgment:
<DEFAULT>
Event Type Rcvd: 001 Application Acknowledgment:
<DEFAULT>
Priority: IMMEDIATE
Processing ID: PRODUCTION
Version ID: 2.3
Entry Action: <NONE>
Exit Action: <NONE>
Process ACK Routine: Q
Subscribers: LA7V Process Order from 521

Example of Collection Lab (Facility 521) Protocols

Server Protocols For

LA7V HOST 170

(1) LA7V Receive Results from 170

Text:
 Package:
 Message Type Rcvd: ORU
 <DEFAULT>
 Event Type Rcvd: R01
 <DEFAULT>
 Priority: IMMEDIATE
 Processing ID: PRODUCTION
 Version ID: 2.3
 Entry Action: <NONE>
 Exit Action: <NONE>
 Process ACK Routine: Q
 Subscribers: LA7V Process Results from 170

Accept Acknowledgment:
 Application Acknowledgment:

Client Protocols For

LA7V REMOTE 521

(1) LA7V Process Results from 170

Text:
 Package:
 Message Type Rcvd: ORU
 Message Type Sent: ACK
 Event Type Rcvd/Sent: R01
 Priority: IMMEDIATE
 <DEFAULT>
 Processing ID: PRODUCTION
 Version ID: 2.3
 Entry Action: <NONE>
 Exit Action: <NONE>
 Process Routine: D ORU^LA7VHL

Sending Facility Required: NO
 Receiving Facility Required: NO
 Date/Time of Message Required: YES
 Security Required:

Logical Link: LA7V 170

(2) LA7V Process Results from IHS

Text:
 Package:
 Message Type Rcvd: ORU
 Message Type Sent: ACK
 Event Type Rcvd/Sent: R01
 Priority: IMMEDIATE
 <DEFAULT>
 Processing ID: PRODUCTION
 <INTERNAL>
 Version ID: 2.3
 Entry Action: <NONE>
 Exit Action: <NONE>
 Process Routine: D ORU^LA7VHL

Sending Facility Required: NO
 Receiving Facility Required: NO
 Date/Time of Message Required: YES
 Security Required:

Logical Link:

Server Protocols For

LA7V REMOTE 521

(1) LA7V Query for Results from 170

Text:
 Package:
 Message Type Rcvd: ACK
 <DEFAULT>
 Event Type Rcvd: R02
 <DEFAULT>
 Priority: IMMEDIATE
 Processing ID: PRODUCTION
 Version ID: 2.3
 Entry Action: <NONE>
 Exit Action: <NONE>
 Process ACK Routine: Q

Accept Acknowledgment:
 Application Acknowledgment:

Appendix

Subscribers: LA7V Send Query to 170
(2) LA7V Order from 170

Text:
Package:
Message Type Rcvd: ORR
<DEFAULT> Accept Acknowledgment:
Event Type Rcvd: 001
<DEFAULT> Application Acknowledgment:
Priority: IMMEDIATE
Processing ID: PRODUCTION
Version ID: 2.3
Entry Action: <NONE>
Exit Action: <NONE>
Process ACK Routine: D ORR^LA7VHL
Subscribers: LA7V Send Order to 170

Client Protocols For

LA7V HOST 170

(1) LA7V Send Order to 170

Text:
Package:
Message Type Rcvd: ORR
<DEFAULT> Sending Facility Required:
Message Type Sent: ORM
<DEFAULT> Receiving Facility Required:
Event Type Rcvd/Sent: 001
<DEFAULT> Date/Time of Message Required:
Priority: IMMEDIATE
<DEFAULT> Security Required:
Processing ID: PRODUCTION
Version ID: 2.3
Entry Action: <NONE>
Exit Action: <NONE>
Process Routine: Q
Logical Link: LA7V 170

(2) LA7V Send Query to 170

Text:
Package:
Message Type Rcvd: ACK
<DEFAULT> Sending Facility Required:
Message Type Sent: QRY
<DEFAULT> Receiving Facility Required:
Event Type Rcvd/Sent: R02
<DEFAULT> Date/Time of Message Required:
Priority: IMMEDIATE
<DEFAULT> Security Required:
Processing ID: PRODUCTION
Version ID: 2.3
Entry Action: <NONE>
Exit Action: <NONE>
Process Routine: Q
Logical Link: LA7V 170

LEDI Menus and Options

New Menus and Options

This section contains new menus and options created for the LEDI software application. We are listing the location and description for each new menu, and new options with descriptions.

New Menus and Options	Description
Lab Shipping Management Menu [LA7S MGR MENU]	The new Lab Shipping Management menu contains all the workload related options available to the LIM. This submenu can be found on the Liaison menu [LRLIAISON] and contains the following options:
Edit Shipping Configuration [LA7S EDIT 62.9]	This option sets up the LAB SHIPPING CONFIGURATION file (#62.9). See example in the Implementation section Step #5.
Edit Shipping Container [LA7S EDIT 62.91]	This option sets up the LAB SHIPPING CONTAINER file (#62.91). See example in the Implementation section Step #5.
Edit Shipping Method [LA7S EDIT 62.92]	This option sets up the LAB SHIPPING METHOD file (#62.92). See example in the Implementation section Step #5.
Edit Shipping Condition [LA7S EDIT 62.93]	This option sets up the LAB SHIPPING CONDITIONS file (#62.93). See example in the Implementation section Step #5.
LEDI Setup [LA7V SETUP]	This option sets up the HL7 and Lab Auto Instrument environment for a HOST or COLLECTION system. This option also sets up entries in the: • HL7 APPLICATION PARAMETER file (#771) • HL LOGICAL LINK file (#870) • HL LOWER LEVEL PROTOCOL file (#869.2) • PROTOCOL file (#101) • AUTO INSTRUMENT file (#62.4) • LA7 MESSAGE PARAMETER file (#62.48) For an example, see the Implementation section Steps #6 and #7.

New Menus and Options	Description
Electronic Catalog Menu [LA7S CATALOG MENU]	The new Electronic Catalog menu contains options that maintain, produce, and print the laboratory test available for the collection site to order. This submenu can be found on the Lab Shipping Management menu [LA7S MGR MENU] and contains the following options:
Electronic Catalog Information Entry [LA7S CATALOG ENTRY]	This option allows the user to enter laboratory test information for the electronic catalog. For an example, see the Option Examples section.
Electronic Catalog Print [LA7S PRINT CATALOG]	This option allows the user to produce a report of all the catalog entries.
View Individual Electronic Catalog Entry [LA7S VIEW INDIVIDUAL ENTRY]	This option allows the user to view or print an individual entry in the Electronic Test Catalog. For an example, see the Option Examples section.

New Menus and Options	Description
Lab Shipping Menu [LA7S MAIN MENU]	The new Lab Shipping menu contains all the workload related options available to the LIM. This submenu can be found on the Laboratory DHCP menu [LRMENU] and contains the following options:
Add/Remove a Shipping Manifest [LA7S MANIFEST TEST ADD/REMOVE]	This option allows a test to be added or removed from an “Open” shipping manifest.
Build Shipping [LA7S MANIFEST BUILD]	This option builds specimens on to a shipping manifest.
Cancel a Shipping Manifest [LA7S MANIFEST CANCEL]	This option cancels an open shipping manifest. All tests are removed and made available for building on another shipping manifest.
Close/Ship a Shipping Manifest [LA7S MANIFEST CLOSE/SHIP]	This option marks a shipping manifest as closed and/or shipped.
Order Status Report [LA7S ORDER STATUS REPORT]	This report allows the user to produce a report based on selected criteria.
Print Shipping Manifest [LA7S MANIFEST PRINT]	This option allows the user to print a shipping manifest list for lab specimens sent outside the facility to a reference lab.
Print Shipping Manifest (Load List) [LA7S MANIFEST PRINT LL]	This option was used only for ALPHA testing and is not included in this release.
Retransmit Shipping Manifest [LA7S MANIFEST RETRANSMIT]	This option allows the user to retransmit a shipping manifest electronically to the host facility. The manifest needs to be in the status of “SHIPPED” to be selected and the shipping configuration associated with the manifest must be “ACTIVE”.

(Revised 12/4/97)

New Menus and Options	Description
Print LEDI Pending Orders [LA7S PENDING PRINT LEDI]	This option is used to print a LEDI shipping manifest of a Collecting facility from the Host facility's LAB PENDING ORDER ENTRY (#69.6) file. You may use this option to reprint a shipping manifest lost or damaged during shipment. The user is prompted for a shipping manifest number. The option then prints a bar coded shipping manifest containing all the patients on that manifest. This option cannot be queued. You can stop the printing by pressing the return key. - The option prints a status message to the screen for your review. Format is: Shipping Manifest #, Collecting Sites UID, Internal File Entry #, STX^PID^SSN^PATIENT NAME^DOB^ETX, List of ordered test Example: 521-97143-1 3471340005 68521-97143-1 3471340005 68 BIRMINGHAM, AL. The bar coded manifest list has three patients per page. Format is: - Shipping Manifest #, Collect UID, Internal File #, Collecting Site Example: 521-97143-1 3471340005 102 BIRMINGHAM, AL. STX^SITE^SITE #^TRANSMIT DATE/TIME^SM #^ETX SM: STX^PD^SSN^SITE #^COLLECTING SITE UID^SEX^COLLECTION DATE/TIME^ETX PD: STX^PD1^SSN^PATIENT NAME^DOB^ETX PD1: 83735.0000 Magnesium

New Menus and Options	Description
National Laboratory File Option [LR7O 60-64]	This submenu can be found on the LIM Workload menu [LR LIM/WKLD MENU] and contains the following new options:
Result NLT Auto Linker [LR7O AUTO RESULT NLT]	This option assists the user in assigning Result NLT codes to Atomic tests in the LABORATORY TEST file (#60). The LEDI software to identify tests uses the RESULT NLT CODE. The site receiving test results uses this code to identify and link test names locally. The RESULT NLT CODE can only be assigned to Atomic tests and it can only be assigned to a single Atomic test. You may choose to have the system prompt with RESULT NLT CODE or it can be automatically stuffed for those having exact match of the names. For an example, see the Option Examples section.
Link Result NLT Manual [LR7O MAN RESULT NLT]	This option allows the user to manually select an Atomic test and assign the test a RESULT NLT CODE. This option can also be used to change or delete RESULT NLT CODES. RESULT NLT CODES are required by the LEDI software to identify test names. The receiving site will use the RESULT NLT CODE to link to local test names. For an example, see the Option Examples section.

(Revised 12/4/97)

New Options	Description
Lab Messaging Nightly Cleanup [LA7TASK NIGHTY]	This is a tasked option to check integrity of LA7 MESSAGING file (#62.49). This file will purge messages that are eligible for purging. This option should be tasked daily, preferably during a period when activity in the Lab Messaging (that is, Universal Interface, LEDI) package is at a minimum. Before the purge of LA7 MESSAGE QUEUE File (#62.49), an integrity check is performed. The integrity check can be run with a couple of switches. LA7FIX = 0 - do not fix errors 1 - do fix errors LA7LOG = 0 - do not log errors in XTMP global. 1 - do log errors in XTMP global LA7ION = name of device to print error report if set to log errors (LA7LOG=1) These parameters can be setup by TaskMan if the site defines them when scheduling the task. An example is given below: Edit Option Schedule Option Name: LA7TASK NIGHTY VARIABLE NAME: LA7FIX VALUE: 0 VARIABLE NAME: LA7ION VALUE: "IRM DEVELOP LASER1" VARIABLE NAME: LA7LOG VALUE: 1 If errors are found, an alert is sent to members of the mail group "LAB MESSAGING" notifying them that errors were detected. If logging of errors occurred, alert recipients would be able to print or view error log from the alert system. Alternatively the error report can be printed using option Print Lab Messaging Integrity Check [LA7 PRINT INTEGRITY CHECK]. The integrity report can be run alone using option Lab Messaging File Integrity Checker [LA7 CHECK FILES]. For an example, see the Implementation section Step #3.

New Options	Description
Lab Universal Interface Menu (LA7 MAIN MENU)	This submenu can be found on the Lab Interface menu [LA INTERFACE] and contains the following two new options:
Lab Messaging File Integrity Checker [LA7 CHECK FILES]	This option checks: - the integrity of LA7 MESSAGE QUEUE file (#62.49) - that entries have the proper cross-references and the cross-references point to the correct entry - fixes bad entries This option provides a printed report of errors found.
Print Lab Messaging Integrity Check Report [LA7 PRINT INTEGRITY CHECK]	This option prints a Lab Messaging Integrity Check Report.
Accessioning Menu [LR IN]	This submenu can be found on the Laboratory DHCP menu [LRMENU] and contains the following new options:
Referral Patient Multi-Purpose Accession [LRLEDI]	This option is used to accession referral patients from another medical center. The patient must already exist in the PATIENT file (#2) to be selected. The option will accession the patient into the REFERRAL PATIENT file (#67) if it does not already exist. The user will be prompted for the Unique Identifier. The user will then be able to order tests for that patient. For an example, see the Option Examples section.
LIM Workload Menu [LR LIM/WKLD MENU]	This submenu can be found on the Lab Liaison menu [LRLIAISON] and contains the following new options:
Workload Code List Report [LRCAPD2]	This option allows the user to print NLT codes from the WKLD CODE file using various sort patterns. Useful to print a list of NLT codes that are active at the site.

New Options	Description
Lab Statistics Menu [LR WKLD]	This submenu can be found on the Supervisor menu [LRSUPERVISOR] and contains the following new options:
Ordered Test Cost by Provider [LR ORDERED TESTS BY PHY]	This option provides a listing of tests sorted by ordering providers. The user can select any date range. The option will list for each order provider the test, test cost and urgency subtotals and totals. The test cost is determined by default cost taken from the LABORATORY TEST file (#60). If the ordered test is linked to a NLT code, and the NLT code has a cost figure defined, NLT code cost figure will be used for calculations. This option uses the LAB ORDER ENTRY file (#69) as the source for the report; therefore, the report date range is limited by the data in this file.
Turnaround Times by Urgency [LR TAT URGENCY]	This option generates a report of the turnaround times for selected lab test for selected urgencies. WKLD urgencies will be included for each normal urgency selected. The report format can be specified. For example, a summary report of a detailed report showing the data used to compute the turnaround times. The report format can be specified, i.e., summary report of a detailed report showing the data used to compute the turnaround times. The user can not change the hours for tours of duty. Tours of duty are: Regular Tour of duty: 7:00 A.M. to 5:00 P.M. Irregular Tour of duty: 5:01 P.M. to 6:59 A.M., Saturday, Sunday, and Holidays. The report extracts data from the ACCESSION file (#68); therefore, if data has been purged, no report is possible. For an example, see the Option Examples section.

The Laboratory options in this section were modified for use with Laboratory Electronic Data Interchange (LEDI). The name of the menu where the option resides and a description of the modifications for LEDI can be found in this section.

Modified Options	Menu Location and LEDI Option Modification
Lab Universal Interface Menu [LA7 MAIN MENU]	This submenu can be found on the Lab Interface menu [LA INTERFACE] and contains the following modified options:
Download to UI [LA7 ADL SEND]	This option has fixed logic to handle alphanumeric UUIDs when building listing of accession to schedule for downloading.
Start/Stop Auto Download Background Job [LA7 ADL START/STOP]	This option adds a display of current number of accessions awaiting checking to determine if the accession meets the criteria for downloading to an instrument.
Display Lab UI Message [LA7 PRINT LAB UI MESSAGE]	In this option the logic used to print any error message associated with a UI message was modified.
National Laboratory File Option [LR7O 60-64]	This submenu can be found on the LIM Workload menu and contains the following modified options:
Semi-Automatic Linking of File 60 to 64 [LR7O 60-64 AUTO]	This option should be run first to automatically link the LABORATORY TESTS file (#60) to WKLD CODES file (#64). It will reduce the LIM workload in preparation for PCE and OE/RR V. 3.0 installs.
	This option looks for potential matches in File #60 with File #64 and allows the user to link the entries. After this option is run, the Manual Linking of File 60 to 64 [LR7O 60-64 MANUAL] option should be run to manually link the entries that this option could not match.

Modified Options	Modifications
National Laboratory File Option [LR7O 60-64]	Continued from previous page.
Manual Linking of File 60 to 64 [LR7O 60-64 MANUAL]	This option loops through the entries in LABORATORY TEST file (#60) in alphabetical order and allows the user to link its entries with appropriate entries in WKLD CODE file (#64). This process needs to be done before the installation of OE/RR V. 3.0. The Semi-Automatic Linking of File 60 to 64 [LR7O 60-64 AUTO] option should be used first to link exact matching entries in File #60 to entries in File #64.
Multipurpose accessioning [LRQUICK]	In this option, the display of accession test group will only occur automatically if 40 or less tests are on the list. Numbering of tests on the list can be “continuous” or based on internal order of tests in the TEST multiple of ACCESSION TEST GROUP file (#62.6). See previous discussion of DD changes to file #62.6 in the Files and New Fields section.
Supervisor Workload Menu [LR SUPER/WKLD MENU]	This submenu can be found on the LIM Workload menu [LR LIM/WKLD MENU] and contains the following modified option:
Lab Test Turnaround Time [LR CAPTT]	This option now accepts entries from the INSTITUTION file (#4), as well as the HOSPITAL LOCATION file (#44) at the Select HOSPITAL LOCATION prompt.

Modified Options	Modifications
Supervisor Reports [LR SUP REPORTS]	This submenu can be found on the Supervisor menu [LRSUPERVISOR] and contains the following new option:
Summary list (supervisors') [LR SUP SUMMARY]	This option differs from the Summary list (extended supervisors') [LRLISTE] option in several ways. • There are three output formats instead of only two. The new extended view will list normal/therapeutic ranges for each test. • The report can be screened to only extract reports for LEDI Collecting facilities (optional). This feature can be used to provide a hard copy report to LEDI collecting facilities. • The report includes information about UID and Collecting Site information. The report also includes Collecting site ordered test information. For an example, see the Option Examples section.

(Revised 12/4/97)

These ten options are modified to add specific LEDI information that is appropriate for each display. For example:

- UID Number for Collection and Host facilities
- Referral statuses, referred tests, and manifest numbers

Modified Options	Modifications
Accessioning Menu [LR IN]	This submenu can be found on the Lab DHCP menu [LRMENU] and contains the following options:
Lookup Accession [LR LOOKUP ACCESSION]	
Review by Order Number [LRCENLKUP]	
Show List of Accessions for a Patient [LRUPT]	
Order/Test Status [LROS]	After selecting a patient, for each day prompted, the status for all tests for that day is given. The report will output for a specified Patient, Order number, Urgency, Status (test complete, on collection list, collected), Provider, and Accession number.
Process Data in Lab Menu [LR DO!]	This submenu can be found on the Lab DHCP menu [LRMENU] and contains the following option:
Print a Load/Work List [LRLLP]	
Misc. Processing Menu [LR PROCESS, MISC]	This submenu can be found on the Process Data in Lab menu [LR DO!] and contains the following options:
Long Form Accession List [LRACC1]	
Short Accession List [LRACC2]	
Work Sheet Accession List [LRACC3]	

Modified Options	Modifications
Misc. Processing Menu [LR PROCESS, MISC]	Continued from previous page.
Work Sheet of all Unverified Accessions for a Date [LRACC4]	
Incomplete Test Status Report [LRWRKINC]	

Option Examples

Electronic Catalog Information Entry [LA7S CATALOG ENTRY]

This option allows the user to enter laboratory test information for the electronic catalog.

Example:

```
ENT    Electronic Catalog Information Entry
IND    View Individual Electronic Catalog Entry
ALL    Electronic Catalog Print
```

Select Electronic Catalog Menu Option: **ENT** Electronic Catalog Information Entry

Select LABORATORY TEST NAME: **PROSTATE SPECIFIC ANTIGEN**

NAME: PROSTATE SPECIFIC ANTIGEN Replace

NATIONAL VA LAB CODE: Prostate Specific Ag//<RET>

RESULT NLT CODE: Prostate Specific Ag//<RET>

CATALOG ITEM: YES//<RET>

COST: **11.18**

PRICE: **22.36**

Select SPECIMEN: SERUM//<RET>

SPECIMEN: SERUM//<RET>

SP COST: **21.32**

SP PRICE: **32.72**

Select SPECIMEN: ^

View Individual Electronic Catalog Entry [LA7S VIEW INDIVIDUAL ENTRY]

This option allows the user to view or print an individual entry in the Electronic Test Catalog.

Example:

```

ENT   Electronic Catalog Information Entry
IND   View Individual Electronic Catalog Entry
ALL   Electronic Catalog Print

```

Select Electronic Catalog Menu Option: **IND** View Individual Electronic Catalog Entry

Select LABORATORY TEST NAME: **PROSTATE SPECIFIC ANTIGEN**

DEVICE: **VIRTUAL TERMINAL**

Electronic Test Catalog JUL 10,1997 14:08 PAGE 1

PROSTATE SPECIFIC ANTIGEN

```

Collection Tube: BLOOD          RED OR GOLD
Ship 1 ml aliquot; Refrigerate
Site/Specimen: SERUM
  Snomed: 0X500
  Reference Low: 0
  Reference High: 4.0
  Units: ng/mL

```

```

NLT Code: 89760.0000           +Prostate Specific Ag
NLT Result Code: 89760.0000    +Prostate Specific Ag

```

```

Default Cost: 11.18           Default Price: 22.36
Specimen: SERUM
Specimen Cost: 21.32          Specimen Price: 32.72

```

Link Result NLT Manual [LR70 MAN RESULT NLT]

This option allows the user to manually select an Atomic test and assign the test a RESULT NLT CODE.

This option can also be used to change or delete RESULT NLT CODES.

Example:

```
Select National Laboratory File Option: 4 Link Result NLT Manual
Would you like a list of Result NLT linked codes

    Select one of the following:

        0          No
        1          ALL
        2          Linked
        3          Unlinked

Enter response: 0 No
    This option will allow you to assign RESULT NLT Code to Atomic Lab Tests.
        You must select a GENERIC NLT (.0000 suffix).

    Tests with the type of NEITHER or null will be skipped in the Auto Mode.
        ONLY ATOMIC LAB TEST YIELDING RESULTS SHOULD BE ASSIGNED RESULT CODES.

Would you like a list of both NLT and RESULT NLT CODES from LABORATORY
TEST file ? No// <RET>

Ready to proceed? YES
```

Select Linking Method
Linking RESULT NLT CODE methods description

ONLY ATOMIC LAB TEST
YIELDING A RESULT CAN BE LINKED TO RESULT NLT CODES.

(S) You can use the semi automated method, which will provide an alphabetical listing of LABORATORY TEST names. The system will prompt you for those tests not already assigned a RESULT NLT CODE. Tests with null TYPE or with the type of NEITHER are excluded.

(M) Using the Manual method, you are able to select ANY ATOMIC test regardless of the type field in the LABORATORY TEST file, and assign it a RESULT NLT CODE. If the test is already linked the system will display the code and allow you to change the RESULT NLT CODE assigned. This method will allow you to change linked LABORATORY TEST to another RESULT NLT CODE.

Select one of the following:

M	Manual
S	Semi-Auto

Select Linking Method : M

You may select any ATOMIC test in LABORATORY TEST FILE: ZINC

- 1 ZINC, SERUM (CLEV)
- 2 ZINC, URINE (OUT)

CHOOSE 1-2: 1

Currently linked to [Zinc] 81988.0000

Now select a RESULT NLT CODE for ZINC, SERUM (CLEV)

RESULT NLT CODE: Zinc// <RET>

IEN: 252
NAME: ZINC, SERUM (CLEV)

TYPE: BOTH

SUBSCRIPT: CHEM, HEM, TOX, SER, RIA, ETC.

LOCATION (DATA NAME): CH;525260;1

LAB COLLECTION SAMPLE: BLOOD

TEST COST: 6.00 FIELD: DD(63.04,525260,

HIGHEST URGENCY ALLOWED: ROUTINE

REQUIRED TEST: YES

FORCED URGENCY: ROUTINE REQUIRED COMMENT: ORDER COMMENT1

NATIONAL VA LAB CODE: Zinc

RESULT NLT CODE: Zinc

Enter RETURN to continue or '^' to exit: <RET>

You may select any ATOMIC test in LABORATORY TEST FILE: POTASS

- 1 POTASSIUM
- 2 POTASSIUM (BR)
- 3 POTASSIUM (OUT)
- 4 POTASSIUM (WO)

CHOOSE 1-4: 1

Currently linked to [Potassium] 84140.0000

Now select a RESULT NLT CODE for POTASSIUM

RESULT NLT CODE: Potassium// <RET>

IEN: 177

NAME: POTASSIUM TYPE: BOTH

SUBSCRIPT: CHEM, HEM, TOX, SER, RIA, ETC.

LOCATION (DATA NAME): CH;6;1

LAB COLLECTION SAMPLE: BLOOD

FIELD: DD(63.04,6,

*QUICK INDEX: YES HIGHEST URGENCY ALLOWED: STAT

REQUIRED TEST: YES REQUIRED COMMENT: ORDER COMMENT1

COMBINE TEST DURING ORDER: YES

NATIONAL VA LAB CODE: Potassium

RESULT NLT CODE: Potassium

You may select any ATOMIC test in LABORATORY TEST FILE: ^

Result NLT Auto Linker [LR70 AUTO RESULT NLT]

This option assists the user in assigning Result NLT codes to Atomic tests in the LABORATORY TEST file (#60). The RESULT NLT CODE is used by the LEDI software to identify tests. The site receiving test results uses this code to identify and link test names locally.

Example:

```
Select National Laboratory File Option: 3  Result NLT Auto Linker

  This option will Auto Link NLT RESULT CODE to Laboratory test file (#60)
    NLT RESULT CODE is used by the LEDI software to identify
    test results returned by Host Laboratories.
    ONLY GENERIC NLT CODES CAN BE LINKED TO LAB TEST

    Only ATOMIC lab tests can have an NLT RESULT CODE.

Would you like a list of RESULT NLT CODES from LABORATORY TEST file? No//<RET>
Ready to proceed? YES

  Do you want to automatically link entries when there is an exact
match on the NAME in both files ? No// <RET>  (No)

60 = CD13
64 = CD13    86539.0000
  Link the two entries? No// Y  (Yes)
                                o----LINKED----o

60 = CD33
64 = CD33    86561.0000
  Link the two entries? No// Y  (Yes)
                                o----LINKED----o

60 = CD56
64 = CD56    86594.0000
  Link the two entries? No// Y  (Yes)
                                o----LINKED----o

60 = CHLORAL HYDRATE
64 = Chloral Hydrate    81654.0000
  Link the two entries? No// Y  (Yes)
                                o----LINKED----o

60 = CHOLYLGLYCINE
64 = Cholyglycine    82241.0000
  Link the two entries? No// Y  (Yes)
                                o----LINKED----o
```

Referral Patient Multi-Purpose Accession [LRLEDI]

The Host facility laboratory users **must** record all patient's demographics and accession the specimens received from the Collection facility laboratory. The Edit Shipping Configuration option is used for recording this data.

The Edit Shipping Configuration option prompts the user to respond to the question "are you using a bar-code reader?," the user may accept the default of "YES" or type "NO" as a response.

When the default of "YES" ("are you using a bar-code reader?") is accepted for the Shipping Configuration option the user may scan the bar coded Shipping Manifest list (initiated by the Collection facility laboratory). The bar coded Shipping Manifest list contains the patient's demographics and specimens accessioning data. The Shipping Manifest data are stored in the LAB SHIPPING MANIFEST file (#62.8) or the LAB PENDING ORDERS ENTRY file (#62.9) at the Collection facility.

The selection not to use a bar code reader requires the users to type in the patient's demographics (i.e., name or social security number) before the specimens can be accessioned. This selection allows typographical mistakes and the possibility of duplicate entries.

Example 1: Manual Accession

```
Select Accessioning menu Option: REF      Referral Patient Multi-purpose
Accession

Are you using a barcode reader? YES// NO  (No)
Select Shipping Configuration: WHITE RIVER JUNCTION VAMC

WANT TO ENTER COLLECTION TIMES? Y// <RET>  (Yes)
Select ACCESSION TEST GROUP: CHEMISTRY

Select Patient Name -'^M' To enter New Name : G4451

    Searching for a Patient file entry

    Searching for a Network Patient

    Searching for a Referral Patient  GREAT,JOY      FEMALE
04-25-65      017784451
    ...OK? Yes// <RET>  (Yes)

NAME: GREAT,JOY      SEX: FEMALE      DOB: 04/25/65

IDENTIFIER: 017784451

Is this the correct patient? YES
```

Enter Remote UID: **5250710001**

**[NOTE: You must manually enter the
COLLECTION LAB UI Number]**

LAB Order number: **185**

Choose one (or more, separated by commas) ('*' AFTER NUMBER TO CHANGE
URGENCY)

1 ASTRA	23 MAGNESIUM
2 IDEAL	24 OSMOLARITY
3 ELECTROLYTES	25 P04
4 ACID PHOSPHATASE	26 POTASSIUM
5 ALKALINE PHOSPHATASE	27 PROTEIN, TOTAL
6 ALBUMIN	28 PROTEIN ELECTROPHORESIS
7 AMYLASE	29 SALICYLATE
8 CALCIUM	30 SGOT
9 CHLORIDE	31 SGPT
10 CHOLESTEROL	32 SODIUM
11 CO2	33 THEOPHYLLINE
12 CPK	34 TOT. BILIRUBIN
13 CPK ISOENZYMES	35 TRIGLYCERIDE
14 CREATININE	36 UREA NITROGEN
15 DIR. BILIRUBIN	37 URIC ACID
16 ETHANOL	38 PROTEIN (CSF)
17 GENTAMICIN	39 LIPID PROFILE
18 GENTAMICIN (PRE)	40 CARDIAC ENZYMES (SGOT, LDH, CPK)
19 GENTAMICIN (POST)	41 LFTS
20 GLUCOSE	42 ARTHRITIS PROFILE
21 LDH	43 CX-3A: NA, K, CL, CO2, BUN, CREA, GLU
22 LDH ISOENZYMES	44 CX-3B: LYLES, BUN, CREA, GLU, CA

TEST number(s): **8**

Other tests? N// **Y** (Yes)

You have just selected the following tests for GREAT,JOY 017-78-4451

entry no.	Test	Sample
1	CALCIUM	BLOOD SERUM

All satisfactory? Yes// **<RET>** (Yes)

LAB Order number: **185**

Collection Date@Time: NOW// **<RET>** (JUL 10, 1997@10:56:30)

PRINT LABELS ON: **LABEL PRINTER** **[NOTE: Enter the name of your site's label
printer]**

DO YOU WISH TO TEST THE LABEL PRINTER? No// **<RET>** (No)

ACCESSION: R/CH 0710 17 **<5250710001>**
CALCIUM BLOOD SERUM

Select Patient Name -'^M' To enter New Name : ^

Example 2: Using Bar Code Reader

Select Accessioning menu Option: **REF** Referral Patient Multi-purpose
Accession

Are you using a barcode reader? YES// **<RET>** (Yes)

Scan Remote Site Bar code (SM):

STX^SITE^521^2970623.133509^521-19970623-2^ETX

[NOTE: This response appears after the bar code is scanned]

Select ACCESSION TEST GROUP: **CHEMISTRY**

Scan Patient/Accession Barcode (PD):

STX^PD^382486204^521^3471740016^m^2970623.133509^ETX

[NOTE: This response appears after the bar code is scanned]

NAME: FORD, HARRISON

SEX: MALE

DOB: 04/01/60

IDENTIFIER: 000000000

LAB Order number: **201**

Choose one (or more, separated by commas) ('*' AFTER NUMBER TO CHANGE
URGENCY)

1	CHEM 7	14	CHEM 7, URINE
2	CHEM 20	15	LIPASE
3	URINALYSIS	16	LITHIUM
4	LIVER FUNCTION	17	AMMONIA
5	MAGNESIUM	18	OSMOLARITY
6	P04	19	OSMOLARITY, URINE
7	LDH	20	PROTEIN, TOTAL
8	ETHANOL	21	LACTIC ACID
9	CPK	22	HDL
10	CHOLESTEROL	23	CO2
11	TRIGLYCERIDE	24	SODIUM
12	ACID PHOSPHATASE	25	GLUCOSE
13	CALCIUM, URINE		

You have just selected the following tests for ROGERS, ROY 100-10-1000

entry no.	Test	Sample
1	MAGNESIUM	BLOOD SERUM
2	GLUCOSE	BLOOD SERUM

Other tests? N// **<RET>** (No)

You have just selected the following tests for ROGERS, ROY 100-10-0000

entry no.	Test	Sample
1	MAGNESIUM	BLOOD SERUM
2	GLUCOSE	BLOOD SERUM

All satisfactory? Yes// **<RET>** (Yes)

LAB Order number: **201**

PRINT LABELS ON: LABLABEL// <RET> R7 GP

DO YOU WISH TO TEST THE LABEL PRINTER? No// <RET> (No)

~For Test: CPK ISOENZYMES PANEL (IMMONO) WR BLOOD SERUM

Enter Order Comment: **FIRST SET OF ISO'S SENT** (~FIRST SET OF ISO'S SENT)

OK? Yes// <RET> (Yes)

ACCESSION: R/CH 0716 397 <1171970397>

CPK BLOOD SERUM

ACCESSION: R/SPC 0716 49 <8671970049>

TOTAL CK FOR ISO BLOOD SERUM

CPK MB (NG/ML) BLOOD SERUM

CPK MB INDEX BLOOD SERUM

LAB PROCESSING INSTRUCTIONS: Please freeze sample [**NOTE:** This comment is from File #60]

GLUCOSE BLOOD SERUM

GENERAL PROCESSING INST.: Send sample on ice

Scan Patient/Accession Barcode (PD): <RET>

Turnaround times By Urgency [LR TAT URGENCY]

This option generates a report of the turnaround times for selected lab test for selected urgencies.

Example:

Select Lab statistics menu Option: **T**URNaround times By Urgency

LEDI Utility - Urgency Turnaround Time

This option generates a report of the turnaround time for selected lab tests. Enter only those urgencies you want extracted. WKLD urgencies will be included for each normal urgency selected. Enter the test(s) you want the report display.

A detailed report is available to show the data being used to compute the turnaround times.

Regular hours are from 7:01 AM to 5:00 PM
Irregular hours includes all other times, holidays and weekends.

Date to START with: TODAY// **<RET>** (JUL 16, 1997)

Date to END with: 07/16/97// **T** (JUL 16, 1997)

Select the laboratory tests to be used in this report --

LABORATORY TEST: **GLUCOSE**

LABORATORY TEST: **<RET>**

Urgencies:

STAT

PLEASE DO NOT USE

ROUTINE

Enter all urgencies you want extracted.

URGENCY: **STAT**

URGENCY: **<RET>**

Include a detailed report? No// **<RET>** (No)

DEVICE: HOME// **PRINTER** [NOTE: Enter the site's printer name]

LEDI Management Report - Urgency Turnaround Time
 From JUL 16,1997 To JUL 16,1997
 Date Printed: JUL 16,1997@11:25:26

Turnaround Time (TAT) - Regular (0701-1700) hours

Number of tests	Total time	Ave TAT
-----	-----	-----
2	62 min	31 min

Turnaround Time (TAT) - Irregular hours

Number of tests	Total time	Ave TAT
-----	-----	-----
13	300 min	23 min

Urgencies:

STAT
 WKL - STAT

Tests:

GLUCOSE

Summary List (Supervisors') [LR SUP SUMMARY]

This option provides a report with a new extended view that lists the normal or therapeutic ranges for each test. You can screen the report to only extract information for LEDI Collecting facilities (optional).

Example: Option and Report

===== Line used for headers

----- Line is used to separate patients

Select Supervisor reports Option: **Summary list (supervisors')**

Summary List (Supervisors') >>> NOT FOR WARD USE <<<

DATE: TODAY//**T-2** (SEP 08, 1997)

Select ACCESSION AREA: **CHEM**

- 1 CHEM-20
- 2 CHEMISTRY

CHOOSE 1-2: **2**

ANOTHER ONE: **<RET>**

Select one of the following:

- 1 ACCESSION NUMBER
- 2 PATIENT

List By: **1** ACCESSION NUMBER

Select one of the following:

- L LONG
- S SHORT
- E EXTENDED

Enter response: S// **EXTENDED**

First Accession number: 1// **<RET>**

Last Accession number: LAST//**2**

Optional - Select Collecting Institution : **<RET>**

Do you wish to see all tests including Common Accessions ? Yes// **Y** (Yes)
 DEVICE: HOME// **PRINTER**

SUMMARY LIST (SUPERVISORS') FOR DATE: SEP 10,1997 PAGE: 1
>> NOT FOR WARD USE <<
ACCESSION AREA(S) :CHEMISTRY

STALL,FRAN 111-11-3333
CHEMISTRY ACC: SPCH 0828 5 ORDER #: 244
Person placing order: SID,ELLE
DATE/TIME SPECIMEN TAKEN: AUG 28, 1997@11:34:13
DATE/TIME OBTAINED INEXACT: YES SPECIMEN TYPE: SERUM
ACCESSION: SPCH 0828 5 REQUESTING PERSON: REFERRAL:521
REQUESTING LOCATION: BIRMINGHAM, AL.
REQUESTING LOC/DIV: BIRMINGHAM, AL.

UID: 4072400005 ORDERING SITE: BIRMINGHAM, AL.

SUMMARY LIST (SUPERVISORS') FOR DATE: SEP 10,1997 PAGE: 2
>> NOT FOR WARD USE <<
ACCESSION AREA(S) :CHEMISTRY

COLLECTING SITE: BIRMINGHAM, AL.
HOST UID: 4072400005 ORDERING SITE UID: 17008280003

ORDERED TEST: Hemoglobin electrophoresis

STALL,FRAN 111-11-3333
CHEMISTRY ACC: SPCH 0828 6 ORDER #: 245
Person placing order: THOMS,KAT
DATE/TIME SPECIMEN TAKEN: AUG 28, 1997@12:41:52
DATE/TIME OBTAINED INEXACT: YES SPECIMEN TYPE: SERUM
ACCESSION: SPCH 0828 6 REQUESTING PERSON: REFERRAL:521

SUMMARY LIST (SUPERVISORS') FOR DATE: SEP 10,1997 PAGE: 3
>> NOT FOR WARD USE <<
ACCESSION AREA(S) :CHEMISTRY

REQUESTING LOCATION: BIRMINGHAM, AL.
REQUESTING LOC/DIV: BIRMINGHAM, AL.

UID: 4072400006 ORDERING SITE: BIRMINGHAM, AL.
COLLECTING SITE: BIRMINGHAM, AL. HOST UID: 4072400006
ORDERING SITE UID: 17008280006

ORDERED TEST: Hemoglobin electrophoresis

STALL,FRAN	111-11-3333
CHEMISTRY ACC: SPCH 0828 7	ORDER #: 246
Person placing order: MACK,JOHN	
SUMMARY LIST (SUPERVISORS') FOR DATE: SEP 10,1997	
>> NOT FOR WARD USE <<	
ACCESSION AREA(S) :CHEMISTRY	
=====	
DATE/TIME SPECIMEN TAKEN: AUG 28, 1997@12:48:51	
DATE/TIME OBTAINED INEXACT: YES SPECIMEN TYPE: SERUM	
ACCESSION: SPCH 0828 7 REQUESTING PERSON: REFERRAL:521	
REQUESTING LOCATION: BIRMINGHAM, AL.	
REQUESTING LOC/DIV: BIRMINGHAM, AL.	
UID: 4072400007 ORDERING SITE: BIRMINGHAM, AL.	
COLLECTING SITE: BIRMINGHAM, AL. HOST UID: 4072400007	
ORDERING SITE UID: 17008280007	
ORDERED TEST: Hemoglobin electrophoresis	

STALL,FRAN	111-11-3333
CHEMISTRY ACC: SPCH 0828 8	ORDER #: 247
Person placing order: REED,DAN	
SUMMARY LIST (SUPERVISORS') FOR DATE: SEP 10,1997	
>> NOT FOR WARD USE <<	
ACCESSION AREA(S) :CHEMISTRY	
=====	
DATE/TIME SPECIMEN TAKEN: AUG 28, 1997@12:56:64	
DATE/TIME OBTAINED INEXACT: YES SPECIMEN TYPE: SERUM	
ACCESSION: SPCH 0828 8 REQUESTING PERSON: REFERRAL:521	
REQUESTING LOCATION: BIRMINGHAM, AL.	
REQUESTING LOC/DIV: BIRMINGHAM, AL.	
UID: 4072400008 ORDERING SITE: BIRMINGHAM, AL.	
COLLECTING SITE: BIRMINGHAM, AL. HOST UID: 4072400008	
ORDERING SITE UID: 17008280008	
ORDERED TEST: Protein electrophoresis	
END OF REPORT	