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APPENDIX A: SAMPLE INSTRUMENT

CLINITEK 100

Load/Work List: 

Auto Instrument Setup: 

BECKMAN CX SERIES

Load/Work List: 

Auto Instrument Setup: 

CX Host Communication Parameters: 

MODULUS DIFFERENTIAL COUNTER

Load/Work List: 

Auto Instrument Setup: 

COULTER STKS

Load/Work List: 

Auto Instrument Setup: 

URO-COMP FOR CLINITEK 200

Load/Work List: 

Auto Instrument Setup: 

AXSYM

Load/Work List: 

Auto Instrument Setup: 

Introduction

To complete this training, the following documentation is required:

- Data Innovations Users Manual
- Laboratory Universal Interface Patch Documentation
- Laboratory Version 5.2, Planning and Implementation Guide

Required Packages

Laboratory Universal Interface Patches LA*5.2*17 and LR*5.2*65

Note: The ACCESSION file (#68) must be edited immediately post patch installation and before any tests can be accessioned (refer to the VISTA Configuration Part A. ACCESSION file portion of this documentation).

For additional requirements, see specifications on page 13 of the Laboratory Universal Interface Patch Documentation.

Special Instructions for the First-Time Computer User

If you are not very familiar with Veterans Health Information Systems and Technology Architecture (VISTA) software applications, we recommend that you study the DHCP User’s Guide to Computing. This orientation guide is a comprehensive handbook benefiting first time users of any VISTA application. The purpose of the introductory material is to help you become familiar with basic computer terms and the components of a computer. It is reproduced and distributed periodically by the Kernel Development Group. To request a copy, contact your local Information Resources Management (IRM) staff.
Special Notations

In this manual, the user's response is bolded. The bolded part of the entry is the letter or letters that must be typed so that the computer can identify the response. In most cases, you need only enter the first few letters. This increases speed and accuracy.

Every response you type in must be followed by pressing the Return key (or Enter key for some keyboards). Whenever the Return or Enter key should be pressed, you will see the symbol <RET>. This symbol is not shown but is implied if there is bolded input.

Within the examples representing actual terminal dialogues, editorial comments are enclosed in brackets and will not appear on the screen.

To stop what you are doing, enter an up-arrow (^). You may use the up-arrow at almost any prompt to terminate the line of questioning and return to the previous level in the routine. Continue entering up-arrows to completely exit the system.

On-line Help

On-line help is available at almost any prompt in the software. Entering a question mark (?) will provide information to help you answer the prompt. In some instances entering two or three question marks will provide even further information.
Site Preparation

Placement Considerations

In determining where the Data Innovations Instrument Manager should be located, consideration should be given to the present and planned locations of Laboratory and Non-Laboratory Analyzers.

- If all analyzers are located in one area, the Instrument Manager may be located within the same area.

- If analyzers are, or will be located in separate distinct areas or facilities, the Instrument Manager should be located in an area that would facilitate connection with minimum routing of communication lines.

- If network capabilities are available throughout the facilities, that is, Local Area Network (LAN) using LAT or TCP/IP Protocols, then the Instrument Manager can be located at any location with network access.
Port Configuration

For port configuration information see Appendix A pages 95 through 98 of Laboratory Universal Interface Patch Documentation.

Test

If using RS-232 Serial connection, test the line by connecting a CRT and successfully send and receive data at the terminal.

Wiring

• Modem wiring for Data Innovations Instrument Managers Dial-In Modem

  Provide direct inward dial line (DID).

• Wiring for Data Innovations Instrument Manager to analyzer(s)

  Use Port Configuration if necessary.

  - See Appendix A pages 95 through 98 of Laboratory Universal Interface Patch Documentation.

  - If the analyzer is connected through a terminal server, supply IRMS with analyzer specific host communication settings: baud rate, data bits, stop bits, parity and protocol for each analyzer.

Test

If using RS-232 Serial connection, test line by connecting a CRT and successfully send/receive data at the terminal.
Instrument Manager-Validation

Instrument Manager Hardware

1. Install PC, monitor, keyboard, and modem per installation instructions.

2. Power Up Instrument Manager.

3. Install Instrument Manager software if not purchased pre-installed per vendor instructions.

4. Notify Data Innovations of individual analyzer software drivers required and provide the following information.

   - Analyzer Name
   - Analyzer software version
   - Communication protocol
   - Unidirectional
   - Bidirectional
   - Cluster
VISTA Configuration

ACCESSION file (#68)

Using FileMan edit the ACCESSION file according to instructions in the Lab Universal Interface Patch Documentation (page 28).

Notes

Field #.091, Numeric Identifier, has been changed to Field #.4.

The Numeric Identifier field is a 1-2 alpha-numeric character(s) using the combination of numbers 1-9 and/or uppercase letters A-Z. If using the UID and an analyzer requires a numeric UID, then use number(s) 1-99.

HL7 Package

When Version 1.6 of the HL7 package is installed, use HL7 V 1.5 options in configuring package parameters related to the Universal Interface.

You must configure the following files:

DEVICE file (# 3.5)

1. Define entry-NULL DEVICE

The VISTA HL7 package requires the entry of a NULL DEVICE.

The NULL DEVICE must be defined if not already defined.

For DSM Sites, Suggested Setup:

<table>
<thead>
<tr>
<th>Field</th>
<th>Entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME:</td>
<td>NULL DEVICE</td>
</tr>
<tr>
<td>$I:</td>
<td>_NLA0:</td>
</tr>
<tr>
<td>VOLUME SET(CPU):</td>
<td>ROU</td>
</tr>
<tr>
<td>SIGN-ON/SYSTEM DEVICE:</td>
<td>NO</td>
</tr>
<tr>
<td>LOCATION OF TERMINAL:</td>
<td>COMPUTER ROOM</td>
</tr>
<tr>
<td>SUBTYPE:</td>
<td>P-OTHER [or any generic terminal type]</td>
</tr>
<tr>
<td>TYPE:</td>
<td>TERMINAL</td>
</tr>
</tbody>
</table>
For MSM sites running additional HL7 interfaces, more than one Null device must be defined. Refer to pages 19 through 22 of the Laboratory Universal Interface Patch Documentation for specifics.

2. Define the device used by the VISTA HL7 package to communicate with the Instrument Manager.

Suggested Setup:

<table>
<thead>
<tr>
<th>Field</th>
<th>Entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME:</td>
<td>LABDATA-IM</td>
</tr>
<tr>
<td>$I:</td>
<td>[Set to appropriate value per operating system]</td>
</tr>
<tr>
<td>ASK DEVICE:</td>
<td>NO</td>
</tr>
<tr>
<td>ASK PARAMETERS:</td>
<td>NO</td>
</tr>
<tr>
<td>SIGN ON/SYSTEM DEVICE:</td>
<td>NO</td>
</tr>
<tr>
<td>LOCATION OF TERMINAL:</td>
<td>[Location of IM]</td>
</tr>
<tr>
<td>SUPPRESS FORM FEED AT CLOSE:</td>
<td>YES</td>
</tr>
<tr>
<td>SUBTYPE:</td>
<td>P-OTHER [or any generic terminal type, e.g., No codes in Open/Close Execute fields or other fields allowing control codes.]</td>
</tr>
<tr>
<td>TYPE:</td>
<td>TERMINAL</td>
</tr>
</tbody>
</table>

Suggested Setup for Alpha VMS/DSM Systems:

<table>
<thead>
<tr>
<th>Field</th>
<th>Entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAT SERVER NODE:</td>
<td>[Terminal Server Name]</td>
</tr>
<tr>
<td>LAT SERVER PORT:</td>
<td>[Terminal Server Port Address]</td>
</tr>
<tr>
<td>VMS DEVICE TYPE:</td>
<td>LAB INSTRUMENT</td>
</tr>
<tr>
<td>LAT PORT SPEED:</td>
<td>[Baud rate of this port]</td>
</tr>
</tbody>
</table>
HL7 APPLICATION PARAMETER file (#771)

LA*5.2*17 patch post init should create the entry LA AUTO INST as follows:

<table>
<thead>
<tr>
<th>Field</th>
<th>Entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME:</td>
<td>LA AUTO INST</td>
</tr>
<tr>
<td>ACTIVE/INACTIVE:</td>
<td>ACTIVE</td>
</tr>
<tr>
<td>HL7 ENCODING CHARACTERS:</td>
<td>~^&amp;</td>
</tr>
<tr>
<td>HL7 FIELD SEPARATOR:</td>
<td></td>
</tr>
<tr>
<td>HL7 MESSAGE:</td>
<td>ORU</td>
</tr>
<tr>
<td>PROCESSING ROUTINE:</td>
<td>ORU^LA7HL7</td>
</tr>
<tr>
<td>HL7 MESSAGE:</td>
<td>ORM</td>
</tr>
<tr>
<td>PROCESSING ROUTINE:</td>
<td>NONE</td>
</tr>
<tr>
<td>HL7 SEGMENT:</td>
<td>OBR</td>
</tr>
<tr>
<td>FIELDS USED IN THIS SEGEMENT:</td>
<td>4,7,8,9,14,22</td>
</tr>
<tr>
<td>HL7 SEGMENT:</td>
<td>OBX</td>
</tr>
<tr>
<td>FIELDS USED IN THIS SEGEMENT:</td>
<td>2,3,4,5,6,7,8</td>
</tr>
<tr>
<td>HL7 SEGMENT:</td>
<td>MSH</td>
</tr>
<tr>
<td>[FIELDS USED IN THIS SEGEMENT:</td>
<td>1,2,3,4,5,6,7,8,9,10,11,12]</td>
</tr>
<tr>
<td>HL7 SEGMENT:</td>
<td>PID</td>
</tr>
<tr>
<td>FIELDS USED IN THIS SEGEMENT:</td>
<td>3,5,7,8,19</td>
</tr>
<tr>
<td>HL7 SEGMENT:</td>
<td>ORC</td>
</tr>
<tr>
<td>FIELDS USED IN THIS SEGEMENT:</td>
<td>1,2,3</td>
</tr>
<tr>
<td>HL7 SEGMENT:</td>
<td>NTE</td>
</tr>
<tr>
<td>FIELDS USED IN THIS SEGEMENT:</td>
<td>3</td>
</tr>
</tbody>
</table>

Note  An entry must also be created or exist in File # 771 for LAB INTERFACE:

<table>
<thead>
<tr>
<th>Field</th>
<th>Entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME:</td>
<td>LAB INTERFACE</td>
</tr>
<tr>
<td>ACTIVE/INACTIVE:</td>
<td>ACTIVE</td>
</tr>
<tr>
<td>FACILITY NAME:</td>
<td>Instrument Manager</td>
</tr>
</tbody>
</table>
HL7 NON DHCP APPLICATION PARAMETER file (#770)

Set up Lab Interface using the HL7 Main Menu

- Version 1.5 Option
- Non- VISTA Application Parameter Enter/Edit

Suggested field entries:

<table>
<thead>
<tr>
<th>Field</th>
<th>Entry</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NAME:</strong></td>
<td>LAB INTERFACE</td>
</tr>
<tr>
<td><strong>VISTA STATION NUMBER:</strong></td>
<td>[Site’s VA station number]</td>
</tr>
<tr>
<td><strong>NON- VISTA FACILITY NAME:</strong></td>
<td>Instrument Manager</td>
</tr>
<tr>
<td><strong>MAXIMUM BLOCK SIZE:</strong></td>
<td>245</td>
</tr>
<tr>
<td><strong>NUMBER OF RETRIES:</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>HL7 DEVICE:</strong></td>
<td>[Name of device specified in DEVICE file (#3.5) to which the Instrument Manager is connected for VISTA connection.]</td>
</tr>
<tr>
<td><strong>HL7 VERSION NUMBER:</strong></td>
<td>[Version of HL7 Specification used by Data Innovations. At this writing it is V. 2.2]</td>
</tr>
<tr>
<td><strong>VISTA APPLICATION:</strong></td>
<td>LA AUTO INST</td>
</tr>
<tr>
<td><strong>LOWER LEVEL PROTOCOL TIMEOUT:</strong></td>
<td>5</td>
</tr>
<tr>
<td><strong>RELATED FILE 771 ENTRY:</strong></td>
<td>LAB INTERFACE</td>
</tr>
<tr>
<td><strong>HL7 PROCESSING ID:</strong></td>
<td>PRODUCTION</td>
</tr>
<tr>
<td><strong>START/STOP TRANSMISSION LOG:</strong></td>
<td>STOP LOG</td>
</tr>
</tbody>
</table>
LA7 MESSAGE PARAMETER CONFIGURATION (#62.48)

The following entries are required for this file:

<table>
<thead>
<tr>
<th>Field</th>
<th>Entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONFIGURATION:</td>
<td>UNIVERSAL INTERFACE</td>
</tr>
<tr>
<td>PROTOCOL:</td>
<td>HEALTH LEVEL SEVEN</td>
</tr>
<tr>
<td>STATUS:</td>
<td>ACTIVE</td>
</tr>
<tr>
<td>DEBUG LOG:</td>
<td>ON [Turning this on logs errors]</td>
</tr>
<tr>
<td>HL7 NON- VISTA APPLICATION:</td>
<td>LAB INTERFACE</td>
</tr>
<tr>
<td>PROCESS IN:</td>
<td>D QUE^LA7UIIN</td>
</tr>
<tr>
<td>PROCESS DOWNLOAD:</td>
<td>D EN^LA7UID1</td>
</tr>
<tr>
<td>REMOTE SYSTEM ID:</td>
<td>[This is a free text field and should contain the following entries in order. .01 field of file #770, #3 field of file #770, field #8 of file # 770 and field #2 of file # 770. Do not insert spaces between field entries. This entry is case sensitive. Example LAB INTERFACE Instrument Manager LA AUTO INST695]</td>
</tr>
</tbody>
</table>
TOPOGRAPHY file (#61)

Map those entries that are used by your site to define test specimens to the appropriate HL7 specimen type.

Refer to page 29 of the Lab Universal Interface Patch Documentation.

URGENCY file (#62.05)

Map VISTA Lab urgency to the HL7 urgency. These entries are used when downloading to analyzer and analyzer accepts multiple urgencies. It is unnecessary to map workload urgencies.

AUTO INSTRUMENT file (#62.4)

Create an entry for each instrument connected through the Instrument Manager.

Entries in the Auto Instrument file must be created as specified in the Laboratory Planning and Implementation Guide. The following are unique requirements for entries using the universal interface.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description/Entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUMBER</td>
<td>Select an entry that is &lt;100 and does not conflict with any Laboratory System Interface (LSI) entries</td>
</tr>
<tr>
<td>NAME:</td>
<td>This name should be 1-8 alpha numeric characters, unique and match exactly the corresponding entry in the Instrument Manager.</td>
</tr>
<tr>
<td>PROGRAM:</td>
<td>This field is not used by the universal interface.</td>
</tr>
<tr>
<td>LOAD/WORK LIST</td>
<td>Name of load/work list associated with this instrument</td>
</tr>
<tr>
<td>ENTRY for LAGEN ROUTINE</td>
<td>IDE</td>
</tr>
<tr>
<td>CROSS LINKED BY</td>
<td>Accession cross-reference</td>
</tr>
<tr>
<td>MESSAGE CONFIGURATION:</td>
<td>UNIVERSAL INTERFACE</td>
</tr>
<tr>
<td>Field</td>
<td>Description/Entry</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CHEM TEST (Multiples)</td>
<td></td>
</tr>
<tr>
<td>PARAM 1:</td>
<td>This is an old field with a new use. Any M code written into this field will be executed on a given test result that is contained in the variable LA7VAL. **Any prior code in this field will need to be removed. If additional coding is required, refer to page 47 of the Laboratory Universal Interface Patch Documentation</td>
</tr>
<tr>
<td>PARAM 2 &amp; 3:</td>
<td>These fields are not used by the universal interface.</td>
</tr>
<tr>
<td>UI TEST CODE:</td>
<td>Refer to analyzer vendor documentation for specific codes required.</td>
</tr>
<tr>
<td>NUMBER OF DECIMAL PLACES:</td>
<td>Site preference</td>
</tr>
<tr>
<td>CONVERT RESULT TO REMARK:</td>
<td>Site preference</td>
</tr>
<tr>
<td>ACCEPT RESULTS FOR THIS TEST:</td>
<td>Site preference</td>
</tr>
<tr>
<td>DOWNLOAD TO INSTRUMENT:</td>
<td>Site preference</td>
</tr>
<tr>
<td>IGNORE RESULTS NOT ORDERED:</td>
<td>Site preference</td>
</tr>
<tr>
<td>REMOVE SPACES FROM RESULT:</td>
<td>Site preference</td>
</tr>
<tr>
<td>DOWNLOAD ENTRY &amp; DOWNLOAD PROTOCOL:</td>
<td>These fields are not used by the universal interface.</td>
</tr>
<tr>
<td>FILE BUILD ENTRY:</td>
<td>EN</td>
</tr>
<tr>
<td>FILE BUILD ROUTINE:</td>
<td>LA7UID</td>
</tr>
<tr>
<td>AUTO DOWNLOAD:</td>
<td>Set to YES if analyzer is run in Bidirectional mode in order to send orders automatically to the analyzer</td>
</tr>
</tbody>
</table>

**Other Files**

Additional entries must be created in Files #’s 3.5, 770, 771, 62.48, and 62.4, for each Instrument Manager in use. (Suggested naming: LAB INTERFACE2, LAB INTERFACE3, etc., UNIVERSAL INTERFACE2, UNIVERSAL INTERFACE3, as applicable.)
Instrument Manager Configuration

Instrument Manager System Configuration

When setting up the system configuration, the following four parameters must match the corresponding entries in the VISTA HL7 package:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sending Application:</td>
<td>[.01 Name field in the NON-DHCP APPLICATION PARAMETER file (# 770).]</td>
</tr>
<tr>
<td>Sending Site:</td>
<td>[The NON-DHCP FACILITY NAME field in the NON-DHCP APPLICATION PARAMETER file (#770).]</td>
</tr>
<tr>
<td>Receiving Application:</td>
<td>[LA AUTO INST as specified in the HL7 APPLICATION PARAMETER file (#771).]</td>
</tr>
<tr>
<td>Receiving Site:</td>
<td>[Your VAMC Site number.]</td>
</tr>
<tr>
<td>Port location:</td>
<td>[Device used by Instrument Manager to communicate to VISTA.]</td>
</tr>
</tbody>
</table>

Configuration for each Analyzer

Analyzer configuration must be specified on the Instrument Manager using the System Configuration-Configuration Editor-Add/Edit Configuration. (See the Data Innovations Instrument Manager User Manual for further explanation.)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configuration Name:</td>
<td>Brief name for the configuration (1-6 alpha-numeric characters).</td>
</tr>
<tr>
<td>Configuration Description:</td>
<td>Detailed description of the configuration. (1-25 alpha-numeric characters).</td>
</tr>
<tr>
<td>Driver type:</td>
<td>Choose the appropriate driver for the instrument you are interfacing. All available drivers will be listed for selection.</td>
</tr>
</tbody>
</table>

Test Mapping performed (if necessary). If you use the test code transmitted by the instrument as the UI test code in the DHCP Auto Instrument file (#62.4), no test code mapping will be required.

Test code mapping is unique to each instrument. If further information is required, refer to the Data Innovations Instrument Manager User Manual.
Configurations may be copied and assigned to multiple identical instruments. (See the Data Innovations Instrument Manager User Manual for further information.)

Port connection for each analyzer is defined on the Instrument Manager using the System Configuration Menu option/Connection Assignment. (See the Data Innovations Instrument Manager User Manual for further explanation.)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection Name:</td>
<td>A unique one to eight character name must be entered which has a corresponding identical entry in the DHCP AUTO INSTRUMENT file (#62.4).</td>
</tr>
<tr>
<td>Configuration Name:</td>
<td>Choose entry created using configuration editor</td>
</tr>
<tr>
<td>Device:</td>
<td>This field is similar to the VISTA Device file, in that a device name is associated with a physical device and the system address to access that device. Refer to Data Innovations Instrument Manager User Manual for specifications.</td>
</tr>
<tr>
<td>Days of data to keep:</td>
<td>This field is selected by the site. This field determines the number of days in which the orders and results are kept on the Instrument Manager for the specified analyzer. Orders will be purged after the specified number of days and will be unavailable for host query purposes. Increase this parameter when testing is not performed within the number of days specified.</td>
</tr>
<tr>
<td>Destination Line(s):</td>
<td>This field is generally left blank. It is only used when running multiple applications (lab and non-lab).</td>
</tr>
<tr>
<td>Auto Start on System Start:</td>
<td>This field determines if the instrument interface should be started automatically when the Instrument Manager system is started.</td>
</tr>
</tbody>
</table>
Cluster Definition

Groups of similar instruments may be "clustered" together. Clustering allows a specimen to be run and reported on any of the analyzers included in the cluster without specifying a particular analyzer. The individual analyzers must have unique entries, and an additional "cluster" entry that contains all tests to be analyzed in the VISTA Auto Instrument file (#62.4). Orders are downloaded using the "cluster" entry and results are returned to the individual analyzer entry that performed the test. All individual analyzers must be defined in the Instrument Manager as specified above. The Cluster is then created using the System Configuration/Connection Assignment/Cluster Definition option on the Data Innovations Instrument Manager. See the Data Innovations Instrument Manager User Manual for further explanation.

When changes are made to any configuration, save the changes to an appropriately labeled floppy disk as per instructions in the Data Innovations Instrument Manager User Manual.
Analyzer Configuration

Each analyzer must be defined in the AUTO INSTRUMENT file (#62.4)

Refer to technical notes in the Lab Universal Interface Patch Documentation pages 47 through 51 for more detailed information.

Analyzer Host Communications to Instrument Manager

Refer to specific analyzer documentation for the required host communication setups.

Barcode Labels

If barcode labels are utilized for instrument interfacing, the following steps are necessary:

1. Printer should be installed and functioning.
2. Barcode capable label routine should be installed and printing barcodes.
3. Barcodes should be set to YES using field #5 Barcode Print of the ACCESSION file (#68) for each accession area that has an analyzer utilizing barcodes.
4. Barcode type should be identified as SHORT (accession number) or LONG (UID) in the Type Of Accession Number field (#092) of the ACCESSION file (#68).

Each analyzer utilizing barcodes should have barcode capabilities enabled. Barcodes should be functional before interfacing is attempted.
Confirming Data Transmission

Test Data Stream (Upload Results)

1. Turn on the Instrument Manager system
2. Start the individual interface to the analyzer to be tested as per the Data Innovations Instrument Manager User Manual instructions.

   **Note** Upload testing should always be successfully performed prior to download testing.

Analyzer to Instrument Manager

1. Transmit results from analyzer to Instrument Manager.

   **Note** This may be accomplished by either running a specimen on the analyzer or retransmitting a prior unverified result.

2. Watch Instrument Manager System Status screen for incrementing IN Status for the analyzer.

Interface Manager to VISTA

1. Turn on Transmission Log via HL7 Menu Option

   **Note** The log will be stored in global TMP(“HL”,hl7 device name for Instrument Manager,date/time,"SEND" or "REC." The SEND node is what VISTA is sending to the Instrument Manager. The REC node is what VISTA is receiving from the Instrument Manager.

   **Caution** Remember to turn off transmission log after communication is successfully established. If transmission log is left on then site incurs danger of disk containing TMP global becoming full. Use above option to purge log, user must be on same system which contains TMP global used to log transmissions.
2. Make sure Background Job is running.

   **Note** Check for routine HLLP in the system status. If not running, start job using the V1.5 HL7 option INITIATE BACKGROUND TASK and selecting LAB INTERFACE. If task appears to start then stop, check for availability of **VISTA DEVICE “NULL DEVICE”**, required in addition to device connected to Instrument Manager, also check ability of **VISTA** to open device that the Instrument Manager is connected to.

3. Message should be sent once background job has been initiated.
Troubleshooting

Successful receipt of message by VISTA HL7 package can be confirmed by viewing the TMP("HL",...global. If a message is rejected by the HL7 package due to transmission problems, the VISTA HL7 package will send an N21 message that indicates a checksum problem with the message.

This usually indicates a possible line noise problem. Recheck line connections.

If the message is successfully received by the VISTA HL7 package it will then pass the message off to the Laboratory package. The Laboratory package will process the message and create an MSA message segment. This will show in the transmission log in the SEND node. The MSA segment will have the following:

- AA - Application Accept
- AR - Application Reject

If AA, then the laboratory package will process the message. Any problems detected in processing the message will be logged in the "debug log" if the site has set “DEBUG LOG” on in File #62.48, LA7 MESSAGE CONFIGURATION. This log is viewed using the LA7 PRINT LAB UI ERROR LOG option.

If AR, then the laboratory package could not find the entry in File #62.48 that will process this message. Review the field "REMOTE ID" for entry "UNIVERSAL INTERFACE" and for correct spelling. Corresponding entries in Files #770, #771 and on Instrument Manager for sending application/facility and receiving application/facility need to be uniform.

If you see that the message is not transmitting, review file setups and check for presence of routines on all the systems. If routines are mapped, check to see if appropriate changes have been made for mapping. Review entries in the Instrument Manager.
Test Data Stream (Download Orders)

1. Accession test specimen or utilize specimen that has been accessioned but not yet assigned to a load/work list.

2. For testing of bidirectional load/work list download, build a load/work list for the analyzer to be tested.

All processes for testing upload should remain active.

Data-VISTA to Instrument Manager

1. For auto download, a message should be created upon accessioning.

2. Download load/work list for testing of bidirectional load/work list download.

Instrument Manager to Analyzer

Messages should be sent from the Instrument Manager to the analyzer including tests to be run on the specimen and may include specimen ID and location on the analyzer if applicable. If unsuccessful, the analyzers host computer will flag an error and reject the request.

Troubleshooting

Watch TMP("HL"...global for messages. If messages are not created, utilize the LA7 PRINT LAB UI ERROR LOG option to review errors as listed above. Review the lab files for correct and complete entries Watch for spelling. If mapping was performed on the Instrument Manager, review for correct and complete entries and spelling. If the message is not transmitting, review file setups and checks for presence of routines on all the systems. If routines are mapped, check to see if appropriate changes have been made for mapping.

If checking data from the Instrument Manager to the Analyzer, check Host Configuration Parameters on your analyzer.

For more information regarding HL7 messages, refer to the Laboratory Universal Interface Patch Documentation pages 65 through 83.
Training

Most of the changes present will be transparent to the lab user. Individuals that are responsible for set up, training and workflow should be informed of any new capabilities. Be aware that the operation of the analyzers may change, especially when moving from a unidirectional to a bidirectional mode.

If the Instrument Manager is located in the laboratory, users may be trained in the following operations of the Instrument Manager:

- Starting/Stopping of individual interfaces.

- Monitoring System Status screen on the Instrument Manager for changes in the IN and SEND queues that would indicate transmission and receipt of messages.

IRMS should be aware that the interface should be re-started after any system downtime. IRM can task multiple background jobs. Only one job will run at a time. If the background job should stop or the system rebooted, then TaskMan will automatically start one of the waiting tasks.

The Laboratory Information Manager (LIM) should be assigned the LA7 MAIN MENU (Lab Universal Interface menu).

It is recommended that the error log be reviewed once a day (on screen or printed) using the option LA7 PRINT LAB UI ERROR LOG.
Appendix A: Sample Instrument

Clinitek 100

Load/Work List:

NAME: CLINITEK-100 LOAD TRANSFORM: UNIVERSAL
TYPE: TRAY,CUP CUPS PER TRAY: 10
FULL TRAY'S ONLY: NO EXPAND PANELS ON PRINT: NO
VERIFY BY: ACCESSION SUPPRESS SEQUENCE #: NO
INCLUDE UNCOLLECTED ACCESSIONS: NO ADDITIONAL LAB TESTS: Instrument Set
Up - Urinalysis
PROFILE: URINALYSIS
TEST: URINALYSIS
TEST: T.REACTION, URINE
TEST: URINE MICROSCOPIC
TRAY #: 1
CUP or SEQUENCE #: 1 CONTROL: CLINITEK QC LEVEL 1
CUP or SEQUENCE #: 2 CONTROL: CLINITEK QC LEVEL 2
WKLD METHOD: CLINITEK 100 WKLD CODE METHOD NAME: CLINITEK 100
WKLD CODE SUFFIX: .4339 MAJOR ACCESSION AREA: URINALYSIS

Auto Instrument Setup:

NUMBER: 18 NAME: CL100-IM
LOAD/WORK LIST: CLINITEK-100
ENTRY for LAGEN ROUTINE: Accession cross-reference
CROSS LINKED BY: ID
MESSAGE CONFIGURATION: UNIVERSAL INTERFACE
METHOD: CLT100 DEFAULT ACCESSION AREA: URINALYSIS
OVERLAY DATA: YES
NUMBER: 1 TEST: URINE COLOR
UI TEST CODE: URINE COLOR ROUTINE STORAGE:
TV(683,1)
CONVERT RESULT TO REMARK: NO
NUMBER: 2 TEST: URINE CLARITY
UI TEST CODE: URINE CLARITY ROUTINE STORAGE:
TV(162,1)
CONVERT RESULT TO REMARK: NO
NUMBER: 3 TEST: SPECIFIC GRAVITY (URINES)
UI TEST CODE: SPECIFIC GRAVITY (URINES) ROUTINE STORAGE: TV(685,1) NUMBER OF DECIMAL PLACES: 3
NUMBER: 4 TEST: URINE PH
UI TEST CODE: URINE PH ROUTINE STORAGE: TV(692,1)
NUMBER OF DECIMAL PLACES: 1
NUMBER: 7 TEST: URINE KETONES
PARAM 1: S
LA7VAL=$S(LA7VAL="Negative":"Negative",1:$P("TRACE;SMALL;MOD;LARGE",";",LA7VA L+1)) UI TEST CODE: URINE KETONES ROUTINE STORAGE: TV(689,1) CONVERT RESULT TO REMARK: NO
WKLD METHOD: CLINITEK 100 WKLD CODE METHOD NAME: CLINITEK 100
WKLD CODE SUFFIX: .4339
Beckman CX Series

Load/Work List:

NAME: CX7M                           TYPE: SEQUENCE/BATCH
CUPS PER TRAY: 0                      FULL TRAY'S ONLY: NO
EXPAND PANELS ON PRINT: NO            VERIFY BY: ACCESSION
SUPPRESS SEQUENCE #: YES              INCLUDE UNCOLLECTED
ACCESSIONS: NO
SHORT TEST LIST: YES
PROFILE: CX7                           ACCESSION AREA: CHEMISTRY
TEST: GLUCOSE (PLASMA/SERUM)          BUILD NAME ONLY: NO
TEST: UREA NITROGEN                   BUILD NAME ONLY: NO
TEST: CREATININE                      BUILD NAME ONLY: NO
TEST: CHEM 7                          BUILD NAME ONLY: YES
TEST: CHEM 3                          BUILD NAME ONLY: YES
TEST: ELECTROLYTES                    BUILD NAME ONLY: YES
TEST: CREATININE CLEARANCE            BUILD NAME ONLY: YES
TEST: GLUCOSE, FLUID                  BUILD NAME ONLY: NO
TEST: PROTEIN,TOTAL (FLUID)           BUILD NAME ONLY: NO
Specimens to EXCLUDE!: BLOOD
PROFILE: HDL                           ACCESSION AREA: CHEMISTRY
TEST: HDL CHOLESTEROL                 BUILD NAME ONLY: NO
TEST: LDL CHOLESTEROL                 BUILD NAME ONLY: NO
TEST: LDL CALCULATED                  BUILD NAME ONLY: NO
PROFILE: DAU                           ACCESSION AREA: CHEMISTRY
TEST: AMPHETAMINES                    BUILD NAME ONLY: NO
TEST: BENZODIAZEPINES                 BUILD NAME ONLY: NO
TEST: ZDRUGS OF ABUSE - URINE SCREEN  BUILD NAME ONLY: YES
WKLD METHOD: SYNCHRON CX7             WKLD CODE METHOD NAME: SYNCHRON CX7
WKLD CODE SUFFIX: .4009               MAJOR ACCESSION AREA: CHEMISTRY
LAB SUBSECTION: SYNCHRON BENCH

Auto Instrument Setup:

NUMBER: 16                              NAME: CX5-IM
LOAD/WORK LIST: CX7M
ENTRY for LAGEN ROUTINE: Accession cross-reference
CROSS LINKED BY: ID
MESSAGE CONFIGURATION: UNIVERSAL INTERFACE
METHOD: CX5
DEFAULT ACCESSION AREA: CHEMISTRY OVERLAY DATA: YES
NUMBER: 1                              TEST: UREA NITROGEN
   UI TEST CODE: 05C
   ROUTINE STORAGE: TV(3,1)         NUMBER OF DECIMAL PLACES: 0
   DOWNLOAD TO INSTRUMENT: YES
NUMBER: 2                              TEST: GLUCOSE
   UI TEST CODE: 06C
   ROUTINE STORAGE: TV(608085,1)   NUMBER OF DECIMAL PLACES: 0
   DOWNLOAD TO INSTRUMENT: YES
NUMBER: 3                              TEST: CREATININE
   UI TEST CODE: 03C
   ROUTINE STORAGE: TV(4,1)        NUMBER OF DECIMAL PLACES: 1
DOWNLOAD TO INSTRUMENT: YES
Auto Instrument Setup (continued):

NUMBER: 37                              TEST: HDL CHOLESTEROL
   UI TEST CODE: 83A
   ROUTINE STORAGE: TV(80,1)       NUMBER OF DECIMAL PLACES: 0
   DOWNLOAD TO INSTRUMENT: NO

NUMBER: 38                              TEST: LDL CHOLESTEROL
   UI TEST CODE: LDL(CALC)
   ROUTINE STORAGE: TV(291,1)       NUMBER OF DECIMAL PLACES: 0
   DOWNLOAD TO INSTRUMENT: NO

NUMBER: 40                              TEST: AMPHETAMINES
   PARAM 1: S LA7VAL=$S(LA7VAL=1:"POS",LA7VAL=0:"NEG",1:""
   S:LA7VAL="" LA7VAL=""
   "",LA7XFORM(3)=0                       UI TEST CODE: 84A
   ROUTINE STORAGE: TV(26,1)       DOWNLOAD TO INSTRUMENT: YES
   TEST: BENZODIAZEPINES
   PARAM 1: S LA7VAL=$S(LA7VAL=1:"POS",LA7VAL=0:"NEG",1:""
   S:LA7VAL="" LA7VAL=""
   "",LA7XFORM(3)=0                       UI TEST CODE: 86A
   ROUTINE STORAGE: TV(216,1)       DOWNLOAD TO INSTRUMENT: YES
   METH NAME: CX5-IM
   FILE BUILD ENTRY: EN
   FILE BUILD ROUTINE: LA7UID
   AUTO DOWNLOAD: NO
   WKLD METHOD: SYNCHRON CX5CE
   WKLD CODE METHOD NAME:
   SYNCHRON CX5CE
   WKLD CODE SUFFIX: .4576

NUMBER: 15                              NAME: CX7-IM
   LOAD/WORK LIST: CX7M
   ENTRY for LAGEN ROUTINE: Accession cross-reference
   CROSS LINKED BY: ID
   MESSAGE CONFIGURATION: UNIVERSAL INTERFACE
   METHOD: CX7
   DEFAULT ACCESSION AREA: CHEMISTRY
   OVERLAY DATA: YES

NUMBER: 1                              TEST: GLUCOSE
   UI TEST CODE: 06C
   ROUTINE STORAGE: TV(608085,1)       NUMBER OF DECIMAL PLACES: 0
   DOWNLOAD TO INSTRUMENT: YES

NUMBER: 2                              TEST: UREA NITROGEN
   UI TEST CODE: 05C
   ROUTINE STORAGE: TV(3,1)       NUMBER OF DECIMAL PLACES: 0
   DOWNLOAD TO INSTRUMENT: YES

NUMBER: 3                              TEST: CREATININE
   UI TEST CODE: 03C
   ROUTINE STORAGE: TV(4,1)
   NUMBER OF DECIMAL PLACES: 1
   DOWNLOAD TO INSTRUMENT: NO

NUMBER: 25                              TEST: HDL CHOLESTEROL
   UI TEST CODE: 83A
   ROUTINE STORAGE: TV(80,1)       NUMBER OF DECIMAL PLACES: 0
   DOWNLOAD TO INSTRUMENT: NO

NUMBER: 27                              TEST: LDL CHOLESTEROL
   UI TEST CODE: LDL(CALC)
   ROUTINE STORAGE: TV(291,1)       NUMBER OF DECIMAL PLACES: 0
   METH NAME: 195
   FILE BUILD ENTRY: EN
   FILE BUILD ROUTINE: LA7UID
   AUTO DOWNLOAD: NO
WKLD METHOD: SYNCHRON CX7
SYNCHRON CX7
WKLD CODE SUFFIX: .4009
Auto Instrument Setup (continued):

NUMBER: 22                              NAME: CX-CLUS
LOAD/WORK LIST: CX7M
ENTRY for LAGEN ROUTINE: Accession cross-reference
CROSS LINKED BY: ID
MESSAGE CONFIGURATION: UNIVERSAL INTERFACE
METHOD: CX5
DEFAULT ACCESSION AREA: CHEMISTRY OVERLAY DATA: YES
NUMBER: 1                               TEST: UREA NITROGEN
UI TEST CODE: 05C
ROUTINE STORAGE: TV(3,1) NUMBER OF DECIMAL PLACES: 0
DOWNLOAD TO INSTRUMENT: YES

NUMBER: 2                               TEST: GLUCOSE
UI TEST CODE: 06C
ROUTINE STORAGE: TV(608085,1) NUMBER OF DECIMAL PLACES: 0
DOWNLOAD TO INSTRUMENT: YES

NUMBER: 3                               TEST: CREATININE
UI TEST CODE: 03C
ROUTINE STORAGE: TV(4,1) NUMBER OF DECIMAL PLACES: 1
DOWNLOAD TO INSTRUMENT: YES

NUMBER: 37                              TEST: HDL CHOLESTEROL
UI TEST CODE: 83A
ROUTINE STORAGE: TV(80,1) NUMBER OF DECIMAL PLACES: 0
DOWNLOAD TO INSTRUMENT: NO

NUMBER: 38                              TEST: LDL CHOLESTEROL
UI TEST CODE: LDL(CALC)
ROUTINE STORAGE: TV(291,1) NUMBER OF DECIMAL PLACES: 0
DOWNLOAD TO INSTRUMENT: NO

NUMBER: 40                              TEST: AMPHETAMINES
PARAM 1: S LA7VAL=$S(LA7VAL=1:"POS",LA7VAL=0:"NEG",1:""
S:LA7VAL="",LA7XFORM(3)=0
ROUTINE STORAGE: TV(26,1) DOWNLOAD TO INSTRUMENT: YES

NUMBER: 41                              TEST: BENZODIAZEPINES
PARAM 1: S LA7VAL=$S(LA7VAL=1:"POS",LA7VAL=0:"NEG",1:""
S:LA7VAL="",LA7XFORM(3)=0
ROUTINE STORAGE: TV(216,1) DOWNLOAD TO INSTRUMENT: YES

METH NAME: CX5-IM
FILE BUILD ENTRY: EN
FILE BUILD ROUTINE: LA7UID
SEND TRAY/CUP LOCATION: yes AUTO DOWNLOAD: YES
WKLD METHOD: SYNCHRON CX7
WKLD CODE METHOD NAME: SYNCHRON CX7
WKLD CODE SUFFIX: .4009
CX Host Communication Parameters:

Enable Barcode type that prints on label printer.

Host Communications:

Mode: Bidirectional    Baud Rate: 9600    Data Bits: 8
Stop Bits: 1    Parity: None    Device ID: 0
Flow Control: XON/XOFF

For Query Mode:

Stream 700 Special Functions /Func 2 Host Set-up = ON
Stream 701 Sample/Cup/Func 6 Host Query= ON
Stream 702 Results/Func 3 Test Results= ON

Stream 703 Instrument Status /Func 2 Bidirectional Start Up = ON.
Modulus Differential Counter

Load/Work List:

NAME: DIFFERENTIAL (BLOOD) LOAD TRANSFORM: UNIVERSAL
TYPE: TRAY,CUP CUPS PER TRAY: 30
FULL TRAY'S ONLY: NO EXPAND PANELS ON PRINT: NO
VERIFY BY: ACCESSION SUPPRESS SEQUENCE #: NO
INCLUDE UNCOLLECTED ACCESSIONS: NO
PROFILE: DIFFERENTIAL (BLOOD) ACCESSION AREA: HEMATOLOGY
TEST: DIFFERENTIAL (BLOOD) BUILD NAME ONLY: YES
TEST: WBC SCAN BUILD NAME ONLY: NO
TEST: SEGS BUILD NAME ONLY: NO
TEST: BANDS BUILD NAME ONLY: NO
TEST: POLYCHROMASIA BUILD NAME ONLY: NO
TEST: NUCLEATED RBC/100WBC BUILD NAME ONLY: NO
PROFILE: SCAN COMPLETE ACCESSION AREA: HEMATOLOGY
TEST: SEGS BUILD NAME ONLY: YES
TEST: BANDS BUILD NAME ONLY: YES
TEST: PLT (ESTM) BUILD NAME ONLY: YES
TEST: POLYCHROMASIA BUILD NAME ONLY: YES
TEST: HYPOCHROMIA BUILD NAME ONLY: YES
TEST: DIFFERENTIAL (BLOOD) BUILD NAME ONLY: YES
TEST: SCAN-COMPLETE BUILD NAME ONLY: NO
PROFILE: RBC MORPHOLOGY ACCESSION AREA: HEMATOLOGY
TEST: PLT (ESTM) SPECIMEN: BLOOD
BUILD NAME ONLY: YES
TEST: RBC SCAN SPECIMEN: BLOOD
BUILD NAME ONLY: YES
WKLD METHOD: MANUAL WKLD CODE METHOD NAME: MANUAL
WKLD CODE SUFFIX: .3000 MAJOR ACCESSION AREA: HEMATOLOGY

Auto Instrument Setup:

NUMBER: 13 NAME: DIFF1-IM
LOAD/WORK LIST: DIFFERENTIAL (BLOOD)
ENTRY for LAGEN ROUTINE: Accession cross-reference
CROSS LINKED BY: ID
MESSAGE CONFIGURATION: UNIVERSAL INTERFACE
METHOD: MODULUS
DEFAULT ACCESSION AREA: HEMATOLOGY OVERLAY DATA: YES
NUMBER: 1 TEST: EOSINOPHILS
PARAM 1: S LA7VAL=+LA7VAL UI TEST CODE: EOSINOPHILS
ROUTINE STORAGE: TV(398,1)
NUMBER: 14 TEST: POLYCHROMASIA
PARAM 1: S LA7VAL=LA7VAL_"+" UI TEST CODE: POLYCHROMASIA
ROUTINE STORAGE: TV(412,1)
NUMBER: 18 TEST: PLT (ESTM)
PARAM 1: S LA7VAL=$S(LA7VAL="0":"ADQ",LA7VAL="1":"DEC", LA7VAL="2":"INC",1:LA7VAL)
UI TEST CODE: PLT (ESTM)
ROUTINE STORAGE: TV(405,1)
NUMBER: 30 TEST: WBC SCAN
PARAM 1: S LA7VAL=$S(LA7VAL="1":"OK",1:LA7VAL)
UI TEST CODE: WBC SCAN  ROUTINE STORAGE:TV(608029,1)
Auto Instrument Setup (continued):

NUMBER: 33  TEST: LARGE PLATELETS

PARAM 1: S

LA7VAL=$S(LA7VAL="1":"OCC",LA7VAL="2":"MODERATE",LA7VAL="3":"MANY",1:LA7VAL)

UI TEST CODE: LARGE PLATELETS

ROUTINE STORAGE: TV(608050,1)

INTERFACE NOTES:  PIN CONFIGURATION:  3(GREEN)...7(RED)...ONLY.
Coulter STKS

Load/Work List:

NAME: COULTER STKS                      LOAD TRANSFORM: UNIVERSAL
TYPE: SEQUENCE/BATCH                    CUPS PER TRAY: 200
FULL TRAY’S ONLY: NO                  EXPAND PANELS ON PRINT: NO
VERIFY BY: ACCESSION                   SUPPRESS SEQUENCE #: NO
INCLUDE UNCOLLECTED ACCESSIONS: NO       SHORT TEST LIST: YES
ADDITIONAL LAB TESTS: Instrument Set Up - Hematology
PROFILE: COULTER CBC                   ACCESSION AREA: HEMATOLOGY
TEST: WBC                                 SPECIMEN: BLOOD    BUILD NAME ONLY: NO
TEST: RBC                                 SPECIMEN: BLOOD    BUILD NAME ONLY: NO
TEST: CBC                                 SPECIMEN: BLOOD    BUILD NAME ONLY: YES
Specimens to EXCLUDE!: PERITONEAL FLUID
WKLD METHOD: STKS                        WKLD CODE METHOD NAME: STKS
WKLD CODE SUFFIX: .4191                   MAJOR ACCESSION AREA: HEMATOLOGY

Auto Instrument Setup:

NUMBER: 11                               NAME: STKS-IM
LOAD/WORK LIST: COULTER STKS
ENTRY for LAGEN ROUTINE: Accession cross-reference
CROSS LINKED BY: IDE
MESSAGE CONFIGURATION: UNIVERSAL INTERFACE
METHOD: STKS                 DEFAULT ACCESSION AREA: HEMATOLOGY
OVERLAY DATA: YES
NUMBER: 1                               TEST: WBC
UI TEST CODE: WBC
ROUTINE STORAGE: TV(384,1)              NUMBER OF DECIMAL PLACES: 1
NUMBER: 2                               TEST: RBC
METH NAME: STKS-IM
INTERFACE NOTES: Timeout (secs) 9 Baud rate 9600 Parity none
Stop Bits 1 Handshake Yes Block size 256 Enable Spooler Yes Replace NULL by SP Yes
AUTO DOWNLOAD: NO
Uro-Comp for Clinitek 200

Load/Work List:

NAME: CLINITEK-200  LOAD TRANSFORM: UNIVERSAL
TYPE: TRAY,CUP  CUPS PER TRAY: 10
FULL TRAY'S ONLY: NO  EXPAND PANELS ON PRINT: NO
VERIFY BY: ACCESSION  SUPPRESS SEQUENCE #: NO
INCLUDE UNCOLLECTED ACCESSIONS: NO  PROFILE: URINALYSIS
ACCESS AREA: URINALYSIS
TEST: URINALYSIS  BUILD NAME ONLY: NO
TEST: T.REACTION,URINE  BUILD NAME ONLY: NO
TEST: URINE MICROSCOPIC  BUILD NAME ONLY: NO
TEST: URINE COLOR  BUILD NAME ONLY: YES
TEST: URINE CLARITY  BUILD NAME ONLY: YES
TEST: URINE GLUCOSE  BUILD NAME ONLY: YES
TEST: URINE WBC/HPP  BUILD NAME ONLY: YES
TEST: URINE RBC/HPP  BUILD NAME ONLY: YES
TEST: SQUAMOUS EPITHELIAL  BUILD NAME ONLY: YES
EST: AMORPHOUS CRYSTALS  BUILD NAME ONLY: YES
TRAY #: 1
CUP or SEQUENCE #: 1  CONTROL: CLINITEK QC
LEVEL 1
CUP or SEQUENCE #: 2  CONTROL: CLINITEK QC
LEVEL 2
WKLD METHOD: CLINITEK 200  WKLD CODE METHOD NAME: CLINITEK 200
WKLD CODE SUFFIX: .3100  MAJOR ACCESSION AREA: URINALYSIS

Auto Instrument Setup:

NUMBER: 12  NAME: URO-IM
LOAD/WORK LIST: CLINITEK-200
ENTRY for LAGEN ROUTINE: Accession cross-reference
CROSS LINKED BY: ID
MESSAGE CONFIGURATION: UNIVERSAL INTERFACE
METHOD: UROC/CLINT
DEFAULT ACCESSION AREA: URINALYSIS
OVERLAY DATA: YES
NUMBER: 1  TEST: URINE COLOR
PARAM 1: S LA7VAL=$P("YELLOW;PALE
YEL;STRAW;AMBER;DK.AMBER;ORANGE;RED;BROWN;BLUE;GREEN",";",LA7VAL+1)
UI TEST CODE: URINE COLOR
ROUTINE STORAGE: TV(683,1)
NUMBER: 2  TEST: URINE CLARITY
PARAM 1: S
LA7VAL=$P("CLEAR;HAZY;CLOUDY;TURBID;FLOC;SMOKEY;MUCOID",";",LA7VAL+1)
UI TEST CODE: URINE CLARITY
ROUTINE STORAGE: TV(162,1)
NUMBER: 3  TEST: SPECIFIC GRAVITY (URINES)
UI TEST CODE: SPECIFIC GRAVITY (URINES)
ROUTINE STORAGE: TV(685,1)  NUMBER OF DECIMAL PLACES: 3
NUMBER: 5  TEST: URINE PROTEIN
PARAM 1: S LA7VAL=$S(LA7VAL=0:"NEG",LA7VAL=1:"TRACE",1:LA7VAL)
UI TEST CODE: URINE PROTEIN
ROUTINE STORAGE: TV(691,1)
NUMBER OF DECIMAL PLACES: 0
Auto Instrument Setup (continued):

NUMBER: 6  TEST: URINE GLUCOSE
  PARAM 1: S LA7VAL=$S(LA7VAL=0:"NEG",1:LA7VAL)
  UI TEST CODE: URINE GLUCOSE  ROUTINE STORAGE: TV(690,1)
  NUMBER OF DECIMAL PLACES: 0

NUMBER: 7  TEST: URINE KETONES
  PARAM 1: S LA7VAL=$S(LA7VAL=">80":"LARGE",1:$P("NEG;TRACE;SMALL;MOD",";",LA7VAL+1))
  UI TEST CODE: URINE KETONES  ROUTINE STORAGE: TV(689,1)

NUMBER: 8  TEST: URINE BILIRUBIN
  PARAM 1: S LA7VAL=$P("NEG;;SMALL;MOD;LARGE",";",LA7VAL+1)
  UI TEST CODE: URINE BILIRUBIN  ROUTINE STORAGE: TV(688,1)

NUMBER: 10  TEST: NITRITE, URINE
  PARAM 1: S LA7VAL=$S(LA7VAL=0:"NEG",LA7VAL=6:"POS",1:LA7VAL)
  UI TEST CODE: NITRITE, URINE  ROUTINE STORAGE: TV(795,1)

NUMBER: 13  TEST: URINE WBC/HPF
  PARAM 1: S LA7VAL=$P("NONE;0-4;5-10;10-20;20-30;30-50;50-100;100+;TNTC",";",LA7VAL+1)
  UI TEST CODE: URINE WBC/HPF  ROUTINE STORAGE: TV(693,1)

NUMBER: 15  TEST: SQUAMOUS EPITHELIAL
  PARAM 1: S LA7VAL=$P("NONE;OCC;FEW;MOD;MANY",";",LA7VAL+1)
  UI TEST CODE: SQUAMOUS EPITHELIAL  ROUTINE STORAGE: TV(777,1)
  INTERFACE NOTES: Clinitek 200 interfaced through a URO-Comp PIN
  CONFIGURATION: 3(GREEN)...7(RED)
Axsym

**Load/Work List:**

- NAME: AXSYM                             TYPE: SEQUENCE/BATCH
- CUPS PER TRAY: 0                      FULL TRAY'S ONLY: NO
- VERIFY BY: ACCESSION                  INCLUDE UNCOLLECTED
- ACCESSIONS: NO
- PROFILE: TDM                            ACCESSION AREA: SPECIAL CHEMISTRY
- TEST: DIGOXIN                            BUILD NAME ONLY: NO
- PROFILE: PSA                            ACCESSION AREA: SPECIAL CHEMISTRY
- TEST: PROSTATE SPECIFIC ANTIGEN              BUILD NAME ONLY: NO
  - WKLD METHOD: ABBOTT AXSYM             WKLD CODE METHOD NAME: ABBOTT AXSYM
  - WKLD CODE SUFFIX: .4455             MAJOR ACCESSION AREA: CHEMISTRY
  - LAB SUBSECTION: SPECIAL CHEMISTRY

**Auto Instrument Setup:**

- NUMBER: 20                              NAME: AXSYM
- LOAD/WORK LIST: AXSYM
- ENTRY for LAGEN ROUTINE: Accession cross-reference
- CROSS LINKED BY: ID
- MESSAGE CONFIGURATION: UNIVERSAL INTERFACE
- METHOD: AXSYM
- DEFAULT ACCESSION AREA: SPECIAL CHEMISTRY
- OVERLAY DATA: YES

- NUMBER: 1                               TEST: PROSTATE SPECIFIC ANTIGEN
  - UI TEST CODE: 441                     ROUTINE STORAGE: TV(608312,1)
  - NUMBER OF DECIMAL PLACES: 1           DOWNLOAD TO INSTRUMENT: NO
- NUMBER: 2                               TEST: DIGOXIN    UI TEST CODE: 601
  - ROUTINE STORAGE: TV(608060,1)             UI TEST CODE: 441
  - NUMBER OF DECIMAL PLACES: 1          DOWNLOAD TO INSTRUMENT: YES
  - METH NAME: AXSYM
  - FILE BUILD ENTRY: EN
  - SEND TRAY/CUP LOCATION: yes
  - WKLD METHOD: ABBOTT AXSYM             WKLD CODE METHOD NAME: ABBOTT AXSYM
  - WKLD CODE SUFFIX: .4455             AUTO DOWNLOAD: YES

**Note**  UI test codes are the assay numbers for each test. Test codes may be found using the axsym instrument terminal, configuration option, or assay parameters.

At this time, the Digoxins are set to run Host/Query. The PSAs are only run once a week and are set up to run Unidirectional and options for Host Query and Auto-ID are turned off. Only Transmit to Host is left on.
On the instrument:

Main Menu:
  Configuration:
    General:
      6, 26, 28, and 29 set to on.

  Sample Bar Code: (We use the LRLABEL routine for Intermec 4100 10 part label)

    Code 39
    Enable Symbology: YES
    Use Checksum: NO

  Ports:
    Host Port: Parity- NONE
    Baud Rate- 9600
    Data Bits- 8
    Stop Bits- 1

Pin Configuration:

STD RS232:

AXSYM VISTA

Pin 1--------Shield---------- 1 ||

Pin 2--------Output-----\ /---> 2

Pin 3<<-------Input------/ \---> 3

Pin 7--------Ground--------- 7

Pins 2 and 3 are "crossed" in this twisted pair diagram.

Further documentation may be found in patch LR*5.2*11 SEQ 6.

The Data Innovations Instrument Manager will automatically default the LRDFN as the patient ID. You must go into Configuration Edit on the Instrument Manager and change the PID to SSN.