

**HDI\*1\*7/LA\*5.2\*74/LR\*5.2\*350**

**Laboratory Electronic Data Interoperability,  
version IV (LEDI IV)**

VA Shield



**Software Requirements Specification (SRS)**

**Version 2.6**

**March 2013**


**Department of Veterans Affairs  
Office of Information and Technology (OIT)  
Product Development**

## Revision History

Date	Revision	Description	Author
Sep 2005	0.1	Initial Version – NDAA Pilot Project	[REDACTED]
Oct 2005	0.2	<p><b>2.2.2. <u>Enhancements to AP Functionality</u></b></p> <ul style="list-style-type: none"> <li>- deleted Modify AP login software to include selection of multiple test codes and topography specimen type and generate a default collection sample</li> <li>- added one sample per AP section (CY, EM, SP)</li> <li>- added for CY, login software</li> <li>- added to, orderable, three</li> <li>- added entry of</li> <li>- moved “Modify the AP verification/release software to determine if results are in-house or incoming from ^LAH” for correct order</li> </ul> <p><b>3.2.1. <u>Microbiology Requirements</u></b></p> <p>3.2.1.2. added “organisms and other etiological agents” deleted “and”</p> <p>3.2.1.4. added “Field” to Topography, added “(2) File 61.2 – Etiology Field, and made File 62 “(3)”</p> <p>3.2.1.5. added words: support, encoded data, LDSI, and “ing” on message deleted: (mainly LEDI), pass, codes, to LEDI via LAH, and an “s”</p> <p>3.2.1.8. added: received via LDSI HL7 messaging deleted: retrieve data...to create and</p> <p>3.2.1.9. deleted entire requirement, same as #12</p> <p>3.2.1.12. added: “extract”</p> <p>3.2.1.13. added “-“ to the word “log-in”</p> <p><b>3.2.2. <u>AP Requirements</u></b></p> <p>3.2.2.1. added “for an outgoing order message” deleted “s” and “to use in the message”</p> <p>3.2.2.4. added “the AP Log-in software, ORU data, “to” in the word into, #68 deleted LRAPLG</p> <p>3.2.2.5. added “log-in process”, “copy the method of test code selection from”, and “process” deleted: resemble, process, and to allow selection of test codes</p> <p>3.2.2.6. added: orderable, within, and process deleted: at and “.”</p> <p>3.2.2.7. added NLT codes, related to the ordered test codes, files #63, #68 and #69 deleted: test codes, File</p> <p>3.2.2.8. added to, process, and The SPECIMEN TYPE deleted: “a” and “which”</p> <p>3.2.2.9. added “s”, #63, 68, and</p> <p>3.2.2.10. added “intermediate” and “the following AP” deleted “different” and “of the AP...subscripts:”</p> <p>added Requirement 3.2.3.9. pulled out from requirement</p>	[REDACTED]


Date	Revision	Description	Author
		<b>3.2.2.11.</b> Requirement reworded <b>3.2.2.12.</b> Requirement reworded <b>3.2.2.13.</b> Requirement reworded <b>3.2.2.14.</b> Requirement reworded <b>3.2.2.15.</b> Requirement reworded <b>3.2.2.16.</b> Requirement reworded <u><b>3.2.3. SNOMED Requirement</b></u> <b>3.2.3.9.</b> added requirement #41 <u><b>3.9. Other Requirement</b></u> added Autopsy update	
Jul 2007	0.3	<u><b>1.1 Interoperability to Initiative</b></u> <u><b>2.2.1. Enhancements to Microbiology Functionality</b></u> Changed enhancements to match requirements <u><b>3.2.1. Microbiology Section Requirements</b></u> Reworded several requirements to clarify	
Aug 2008	0.4	<u><b>3.3.2. Non-functional Requirement 2:</b></u> DD approval request for File #69, SPECIMEN sub-file, field DATE/TIME RESULTS AVAILABLE #21	
Aug 2008	0.5	<u><b>3.2.3.13. Functional Requirement 64:</b></u> Request removal of LAYGO in field COLLECTION SAMPLE field (#.01) of the COLLECTION SAMPLE sub-field (#60.03) of the LABORATORY TEST file (#60)	
Aug 2008	0.6	<u><b>3.3.1. Non-functional Requirement 1</b></u> LA*5.2*74 DBIA subscription request to subscribe to DBIA 1373	
Feb 2009	0.7	<u><b>3.2.1.1. - 3.2.1.33. Functional Requirements:</b></u> Added more technical detail to each requirement, in the absence of a SDD, for testing purposes- from SRS Testability. The requirements were merged, added to, or removed.	
Mar 2009	0.8	<u><b>3.2.2.1. - 3.2.2.34. Functional Requirements:</b></u> Added more technical detail to each requirement, in the absence of a SDD, for testing purposes- from SRS Testability. The requirements were merged, added to, or removed. <u><b>3.2.2.25. Functional Requirement 52</b></u> - Changed some references from LDSI to LEDI	
Mar 2009	0.9	<u><b>3.2.2.35. - 3.2.2.47, 3.2.3.1. - 3.2.3.12. 3.2.4.1. – 3.2.4.5. Functional Requirements:</b></u> Added more technical detail to each requirement, in the absence of a SDD, for testing purposes- from SRS Testability. The requirements were merged, added to, or removed.	

Date	Revision	Description	Author
Mar 2009	0.91	<p><b><u>1.1. Purpose:</u></b> Changed the old facilities to the actual facilities used to date.</p> <p><b><u>1.2.1. Acronyms:</u></b> Added “T” for Technology in ATC, Corrected “LA7” to mean Automated Lab Instruments</p> <p><b><u>Table 2-1:</u></b> Changed the old facilities to the actual facilities used to date.</p> <p><b><u>2.1.4. Communications:</u></b> Changed AAC to ATC</p> <p><b><u>2.2.1. Enhancements to Microbiology Functionality:</u></b></p> <p><b><u>2.2.2. Enhancements to AP Functionality:</u></b></p> <p><b><u>2.2.3. Enhancements to SNOMED CT Functionality:</u></b></p> <p><b><u>2.2.4. Enhancements to LOINC Functionality:</u></b></p>	[REDACTED]
Apr 2009	0.92	<p><b><u>3.2.3.14. – 3.2.3.17. Functional Requirements 65-68:</u></b> Added for the file lock down effort</p>	[REDACTED]
May 2009	0.93	<p><b><u>3.2.5.1. – 3.2.5.12. Functional Requirements 80 – 91:</u></b> Added requirements for the tool.</p>	[REDACTED]
May 2009	0.94	<p><b><u>3.2.3.14. – 3.2.3.24. Functional Requirements 65 – 75:</u></b> Added for SNOMED effort, including file lockdown.</p>	[REDACTED]
May 2009	0.95	<p><b><u>1.3.1. Acronyms</u></b></p> <p><b><u>2.2. Product Features</u></b></p>	[REDACTED]
May 2009	0.96	<p><b><u>3.2.2.2. Functional Requirement 28:</u></b> Removed.</p> <p><b><u>3.2.2.15. Functional Requirement 42:</u></b> Changed some wording</p> <p><b><u>3.2.2.17. Functional Requirement 44:</u></b> Changed some wording</p> <p><b><u>3.2.3.6. Functional Requirement 57:</u></b> Changed some wording</p>	[REDACTED]
May 2009	0.97	<p><b><u>Title page/ 1.1. Purpose:</u></b> Added the patch numbers</p>	[REDACTED]
Jun 2009	0.98	<p><b><u>1.2. Scope:</u></b> Remove the second subscript tests</p> <p><b><u>1.4. References:</u></b> Made the dashes the same size</p> <p><b><u>2.1.3. Software Interfaces:</u></b> Changed Austin Automation Center (AAC) to Austin Information Technology Center (AITC), changed believability to validity</p>	[REDACTED]

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		<p><b><u>2.2. Products Features:</u></b> Verify that there is a corresponding requirement for p. 11- bullet 4, page 14- bullet 6</p> <p><b><u>2.2.3. Enhancements to SNOMED CT:</u></b> Page 16- Change HDR to STS, change SNOMED to SNOMED CT, added sentence above 4<sup>th</sup> number, changed HDR to STS, combine bullets 4 and 5, use correct SNOMED CT field number, reword sentence in bullet- last sentence, remove incomplete sentence- bullet 9, Page 17- reword sentence- bullet 6, bullet 10- add a note, Page 18- bullet 3- verify placement</p> <p><b><u>2.2.4. Enhancements to Develop Tool:</u></b> Page 19- verify a corresponding requirement</p> <p><b><u>3.2.2.27. Functional Requirement 49:</u></b> Fix the numbering and lettering</p> <p><b><u>3.2.3. SNOMED CT Requirements:</u></b> Name the particular SRS to which this refers</p> <p><b><u>3.2.3.1. Functional Requirement 50:</u></b> Add CT to SNOMED, added note about mapping</p> <p><b><u>3.2.3.2. Functional Requirement 51:</u></b> Add CT to SNOMED, added note about mapping reworded “note”</p> <p><b><u>3.2.3.3. Functional requirement 52:</u></b> Added CT to SNOMED</p> <p><b><u>3.2.3.4. Functional requirement 53:</u></b> Added CT to SNOMED</p> <p><b><u>3.2.3.5. Functional requirement 54:</u></b> Added CT to SNOMED</p> <p><b><u>3.2.3.6. Functional requirement 55:</u></b> Removed a “t”</p> <p><b><u>3.2.3.11. Functional requirement 60:</u></b> Reworded last sentence</p> <p><b><u>3.2.3.12. Functional requirement 61:</u></b> Get correct SNOMED CT field number</p> <p><b><u>3.2.3.19. Functional requirement 68:</u></b> Reworded bullet 8</p> <p><b><u>3.2.3.21. Functional requirement 70:</u></b> Added a note saying that more specific info, in the SDD</p>	
Jun 2009	0.99	<p><b><u>2.2.3 Enhancements to SNOMED CT Functionality:</u></b> 14<sup>th</sup> Bullet - Replaced SNOMED with NAME and out in the .01 field, 26<sup>th</sup> Bullet – Added “exception term statuses”, 29<sup>th</sup> Bullet - _Add the word “term”</p> <p><b><u>3.2.3.19. Functional Requirement 68:</u></b> Removed VISTA Lab, added the last statement and statuses</p>	

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Jul 2009	0.991	<p><b><u>Title Page:</u></b> Changed date to reflect current date</p> <p><b><u>1.3.1. Acronyms:</u></b> Added DS, ETS, and STS</p> <p><b><u>3.2.3.19. Functional Requirement 68:</u></b> Actually removed VISTA Lab and corrected the sentence above the</p> <p><b><u>3.2.2.6. Functional Requirement 28:</u></b> Renumbered</p> <p><b><u>2.2.1. Enhancements to Microbiology Functionality:</u></b> Added that File 62.06 is mapped to LOINC instead of SNOMED</p> <p><b><u>2.2.3. Enhancements to SNOMED CT Functionality:</u></b> Same as above</p> <p><b><u>3.2.3. SNOMED CT requirements:</u></b> Corrected the name of patch LR*5.2*346.</p>	[REDACTED]
Jul 2009	1.0	<b><u>Approved</u></b>	[REDACTED]
Apr 2011	1.1	<b><u>Removed requirements no longer active:</u></b>	[REDACTED]
Oct 2011	1.2	<ul style="list-style-type: none"> <li>- Inserted File 63 Remediation RSD since the LR *5.2*404 patch has been included within the November, 2011 BETA Preparatory Patch</li> <li>- Removed all DOD &amp; CHCS related references since the Cerner Lab Info Management System will be handling those communications.</li> <li>- Indicated that all Anatomic Pathology and Microbiology orders and results are not in the LEDI IV software and will not be until the LSRP install occurs in Increment 6.</li> <li>- Added in user-related Functionality changes arising from five change requests. See Product Features' Section of the SRS.</li> </ul>	[REDACTED]
Oct 2011	1.3	Completed review with the LDSI/LEDI IV Development team.	[REDACTED]
Oct 2011	1.4	Minor updates to the wording of the new CRs.	[REDACTED]
Oct 2011	1.5	<ul style="list-style-type: none"> <li>- Added Two More CRs from Development.</li> <li>- Per Carol &amp; Levi, the SNOMED CT Codes DO belong as new functionality in this SRS. Patch LR 346 did not cover the SNOMED CT Codes. Added SNOMED CT code requirements in to SRS.</li> <li>- Removed two SNOMED CT requirements since they had</li> </ul>	[REDACTED]

Date	Revision	Description	Author
		been released in LEX*2*41. - Added in Code CR 5504 per Carol's Input.	
Oct 2011	1.5	Document Edit	
Nov 2011	1.6	Placed N/A under Section 5.4 as well as under five of the remediation steps in Section 5.5 per Dev Lead.  Re added a SNOMED CT Requirement back in to SRS  Added one line to Sections 1 and 2.3 about the non-inclusion of Electronic Communication of AP/MICRO orders and results in this patch.  Updated CCR00005538 to read "Not performing", per Developer input.  Removed a duplicate CCR 00005504 from the SRS. Previously, it was CCR requirement number 4.  Per PM, added an Approval Page to the end of the SRS.  Took out the reference to the DOD in the statement of issue section as well as the write up for CCR00005156. DOD is not in scope for LEDI IV.	
Nov 2011	1.7	Remove version number from name of the file. Add approvals to Attachment A.	
Dec 2011	1.8	Add approval to Attachment A.	
Feb 2012	1.9	Added reference to HDI*1*7 as part of the LEDI IV version 20.5 build	
Apr 2012	2.0	Marked LOINC Functionality as Future to synch up with the User Manual.	
Oct 2012	2.1	Added "VA Shield" above the graphic for 508 compliance, <b><u>Section 1.1, Paragraph 3:</u></b> Slightly modified the wording. <b><u>Section 2.1:</u></b> Replaced "LEDI IV" with "Laboratory", <b><u>Section 4.3.7:</u></b> Renumbered the requirements starting at #58 for consistency. <b><u>Section 5.1 File 63 Remediation Overview:</u></b>  The File 63 Remediation tools run automatically once per month in analyze and report mode (as part of the scheduled task LRTASK NIGHTY) and notify a pre-defined mail group if an error is found.  <b><u>Section 5.1, Paragraph 3:</u></b> Removed "for both the LEDI	

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		<p>IV Production and LEDI IV test sites”</p> <p><b>Section 5.1, Paragraph 3:</b> Changed “certain users” to, “allow users with the appropriate access...”</p> <p><b>Section 5.2:</b> Modified to add header Number 10 to the header of the last bullet point.</p> <p><b>Section 5.2.1 File 63 Remediation:</b> This software utility is run automatically after installation of LEDI IV in Analyze and Report mode</p> <p><b>Section 5.2.2 File 63 Remediation:</b> Only lab users with VistA Programmer access will be able to manually repair the errors identified as part of the File 63 Remediation data dictionary analysis results report.</p> <p><b>Section 5.2.1, 5.2.2:</b> Reformatted the spacing</p> <p><b>Section 5.2.4 and 5.2.6:</b> Modified File 63 Remediation requirements 4 and 6 to reflect “repair” versus analyze and report.</p> <p><b>Section 5.2.6:</b> Clarified Functional Requirement for readability</p> <p><b>Section 5.5:</b> Replaced “may” with “should” undergo analysis and reporting” to encourage the sites to do File 63 Remediation.</p> <p><b>Section 5.5 - User Class Characteristics:</b> Removed “LDST” from the last sentence.</p> <p><b>Section 6.1, Item 6:</b> Error Reports Results - Added the functionality to sort error results report for the CH subscript after the File 63 Remediation is run.</p> <p>Reference Range - Added new functionality to allow users to modify Reference Ranges/Units on Lab Reports.</p> <p>Cerner References - Removed “Cerner” references from the SRS due to the change in direction of Laboratory Reengineering. LSRP References - Removed all references to “LSRP” and “Lab Systems Reengineering Project” and replaced them with “Laboratory Systems” due to the change in direction and the shutdown of Lab Reengineering project.</p> <p>Removed the new signature page and replaced it with the old. No need to revisit.</p>	
Oct 2012	2.2	<p>LEDI IV specification now includes updates for LEDI Version 2.3, October 2012, Updated with LEDI IV Update 1, (LR*5.2*427/LA*5.2*80) Requirements</p> <p>The following are the changes listed below:</p> <p><b>Section 6.1, Item 7:</b> Enable AP/MICRO interface. Re-</p>	



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		<p>added functionality that AP/MICRO interface functionality that had been removed from the SRS. The assumption that “LSRP” will be taking over AP/MICRO communications is no longer valid.</p> <p><b>Section 6.1, Item 8:</b></p> <p>Enable editing of the NAME (.01) fields in files 61, 61.2 and 62.<b>Section 6.1, Item 9:</b></p> <p>Skip AP Accession Number.</p> <p><b>Section 6.1, Item 10:</b></p> <p>Move Pathologist signature on AP &amp; MICRO e-reports.</p>	
Oct 2012	2.3	<p>Accepted the form and style changes.</p> <p>Standardized the way VistA appears throughout.</p> <p>Reworded various sections – especially toward the front of the document.</p>	
Oct 2012	2.3	<p><b>Section 4.2.18, Req. # 37:</b> Added sentence to Req # 37 related to TIU storage.</p> <p><b>Section 4.2, Reqs. #36 and 40:</b> Removed new requirements # 48 and # 49 since they are already covered by requirements #36 and #40 in the SRS.</p>	
Nov 2012	2.3	<p><b>Revision History Section:</b> SRS changes are after the title page was updated to reflect the original patch numbers and moving the “Update 1” passage in to the Revision History.</p> <p><b>Section 6.1, Item 8:</b> Add “These fields were made non-editable in the LEDI IV release.”</p>	
Dec 2012	2.4	<p><b>Revision History:</b> Changed it to make it easier for readers to locate the actual requirements.</p> <p>Revised Date Formats to make them consistent in Revision History.</p> <p>Added constraint that LEDI IV must be Nationally released prior to the nationwide release of the LEDI IV Update Software.</p>	
Dec 2012	2.5	<p>LEDI IV specification now includes updates for LEDI Version 2.5, December 2012. The SRS now includes the LEDI IV Update which will also be identified by patch numbers LR*5.2*427/LA*5.2*80.</p> <p><u>The following are the changes for LEDI IV Update listed below:</u></p>	

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		<p><b><u>Section 4.3, Reqs. 62, 63:</u></b> Added logic to ensure that duplicate alerts are not sent from <i>VistA</i> Lab to STS for SNOMED CT Update Exceptions.</p> <p><b><u>Throughout the SRS:</u></b></p> <p>Removed the “1” from Update 1 to make the SRS generic when it is eventually uploaded to TSPR.</p>	
Jan 2013	2.5	<p><b><u>Requirement #33:</u></b></p> <p>Per SQA, specified which lab was the Host and which lab was the collecting for clarity.</p> <p><b><u>Requirement # 63:</u></b></p> <p>Based on business and development input, added a time frame for when STS will return an updated SCT file to the site if any errors are found during the check of the lab’s mapping against the LEXICON.</p> <p>Also, indicated in the same message that the lab site does not need to do anything until STS returns the new SCT mapping file to them.</p> <p><b><u>Throughout Requirements:</u></b></p> <p>SQA suggested “LDSI” be changed to “LEDI”. Made the change.</p> <p><b><u>Section 6.1:</u></b></p> <p>Added Code CR 4828 Option to check SCT mappings against the Lexicon.</p> <p><b><u>Section 1.1 Introduction:</u></b></p> <p>Modified the last sentence.</p> <p><b><u>Section 4.4:</u></b></p> <p>Removed the NOTE relating to LOINC being included in a future patch.</p> <p><b><u>Section 5.3 System Features:</u></b></p> <p>Changed the first sentence to reflect that the messages to the LMI group are sent monthly, not daily.</p> <p><b><u>Throughout SRS Document:</u></b></p> <p>Accepted revision marks but off set the latest changes in a different color so that ORT can see what has changed.</p>	
Jan 2013	2.6	<p><b><u>Section 6.1 Number 12:</u></b></p> <p>Added CR00009165 – modify the AP reports to replace “AFIP” or Armed Forces Institute of</p>	

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		Pathology with “JPC” or Joint Pathology Center. This change came in after the submission of the SRS to ORT.	
Mar 2013	2.6	Per PM, eliminated all references to “Maintenance” patch and replaced them with “Update” patch.	

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# 1 Introduction

## 1.1 Description of the issue

Laboratory Electronic Data Interchange (LEDI IV) provides a Health Level Seven (HL7) bi-directional electronic sharing of lab data between VA *VistA* Laboratories and Commercial Reference Labs and the Laboratory System (aka, “Lab System”).

LEDI IV facilitates the electronic communication between the Laboratory System and *VistA*. Releasing LEDI IV prior to deployment of the Lab System rather than in conjunction with Lab System will decrease deployment complexity of the Lab System.

Note: This SRS contains the requirements for both LEDI IV national release and LEDI IV Updates. Since all but one of the Change Requests in the LEDI IV Updates are maintenance-oriented, project management determined that a new SRS was not needed. Additionally, the AP/MICRO interface requirements that had been removed from the LEDI IV SRS are once again included.

There are three patches that provide the LEDI IV functionality in this SRS: HDI\*1\*7, LA\*5.2\*74 and LR\*5.2\*350. The LR\*5.2\*350 patch includes File #63 (Lab results file) remediation utilities that will analyze, identify, and correct the data dictionary configuration errors identified in the *VistA* Laboratory Package LAB DATA File (#63). In addition there are six Change Requests arising from the prior field tests that are included in this SRS.

There are two patches that provide an update to the LEDI IV functionality in this SRS: LR\*5.2\*427 and LA\*5.2\*80. LR\*5.2\*427 and LA\*5.2\*80 consist of both maintenance fixes as well as enhancements to allow AP/MICRO orders and results to be sent and received electronically. The new maintenance Change Requests are included in this SRS.

Version 2.5 of the SRS contains the remaining patch that completes the update to the LEDI IV functionality. Patches LR\*5.2\*427 and LA\*5.2\*80 are documented under the final version of this SRS. The maintenance & update process of the SNOMED CT code are documented in the software and as an informational patch with the LEDI IV Update patch.

## 1.2 Definitions, Acronyms, and Abbreviations

All Laboratory System definitions are included in the *Master Term Glossary* found in the Project Notebook in the VA Office of Information and Technology (OIT) Technical Services Project Repository (TSPR):

[REDACTED]

Acronyms are listed at:

[REDACTED]

[REDACTED]

## 1.3 Reference Materials

*VistA* documentation can be downloaded from the VA Software Documentation Library (VDL) website:



## 2 General Requirements

### 2.1 User Interfaces

Laboratory users will use *VistA* to build orders, create shipping manifests, close/ship shipping manifest, verify/ release and modify results into *VISTA* for VA facilities via LEDI IV.

### 2.2 Hardware Interfaces

No special hardware interfaces are required for LEDI IV.

### 2.3 Software Interfaces

#### ***VistA* Labs that Use Laboratory System**

LEDI IV Update will be utilized to send and receive lab orders and results, including Microbiology and Anatomic Pathology (AP):

- Between Laboratory System and the associated *VistA* database.
- Between Laboratory System and commercial reference labs.

#### **For VA Lab to VA Lab Interfaces:**

LEDI IV Update enhances the general LEDI IV functionality.

#### **For VA to Commercial Reference (external to VA) Lab:**

LEDI IV Update enhances the general LEDI IV functionality.

#### **Note:**

LEDI IV Updates most significant enhancement is that it supports the sending and receiving of Microbiology and Anatomic Pathology (AP) orders and results between Laboratory System Remote hosted lab and the associated *VistA* database.

## **2.4 Communication Interface**

Health Level Seven (HL7).

## **2.5 Memory Constraints**

There are no memory constraints for this project.

## **2.6 Special Operations**

This functionality does not require any special operations.

## **2.7 Implementation Requirements**

There are no special implementation interfaces required for this new functionality.  
Any site implementations that are necessary will be performed by the Implementation Team.

## **2.8 User Characteristics**

Users of the new functionality provided by LEDI IV will be laboratory users at VA labs: both those converted to the Laboratory System and those remaining on Legacy lab.

## **2.9 Dependencies and Constraints**

The functionality provided by LEDI IV is dependent on the SNOMED CT mapping that is done by Standards and Terminology Service (STS), mapping must be completed prior to LEDI IV patch install. Due to this dependency LEDI IV patches will be released nationally in a controlled sequence.

Constraint: The Nationally released LEDI IV must be in production before the LEDI IV Update patch is released nationwide.

## **2.10 Apportioning of Requirements**

The sending of Anatomic Pathology (AP) and Microbiology (MICRO) orders and results will be enabled only after the sites install the LEDI IV Update software.

# **3 Database Repository**

## **3.1 Database Repository**

The Lexicon database will store the SNOMED CT codes that are required for this project.

## 4 Software Functional Requirements

### 4.1 Microbiology Section Requirements

#### 4.1.1 Functional Requirement 1

The *VISTA* Laboratory microbiology application shall determine the File 60, field 64 NATIONAL VA LAB CODE - test order number, File 61 - type of specimen and File 62 - collection sample codes to use in the message.

##### 4.1.1.1 Functional Requirement 1B

The *VISTA* Laboratory microbiology application shall include appropriate SNOMED CT mappings in HL7 segments for the following files:

File 61 - Topography Field	File 61.2 - Etiology Field	File 62 - Collection Sample
20 SNOMED CT ID (XNJ12)	21 SCT CODE STATUS (S)	21 SCT CODE STATUS (S)
21 SCT CODE STATUS (S)	22 SCT TOP CONCEPT (*P64.061')	22 SCT TOP CONCEPT (*P64.061')
22 SCT TOP CONCEPT (*P64.061')	23 SCT STATUS DATE (Multiple-61.023)	23 SCT STATUS DATE (Multiple-61.023)
23 SCT STATUS DATE (Multiple-61.023)	.01 SCT STATUS DATE (D)	.01 SCT STATUS DATE (D)
.01 SCT STATUS DATE (D)	1 STATUS CHANGE TO (S)	1 STATUS CHANGE TO (S)
1 STATUS CHANGE TO (S)	24 SCT COMMENTS (Multiple-61.024)	24 SCT COMMENTS (Multiple-61.024)
24 SCT COMMENTS (Multiple-61.024)	.01 SCT COMMENT TYPE (MF)	.01 SCT COMMENT TYPE (MF)
.01 SCT COMMENT TYPE (MF)	.02 SCT COMMENT TEXT (F)	.02 SCT COMMENT TEXT (F)
.02 SCT COMMENT TEXT (F)		21 SCT CODE STATUS (S)

#### 4.1.2 Functional Requirement 2

The *Vista* Laboratory LEDI application shall process Microbiology orders.

#### 4.1.3 Functional Requirement 3

The *VISTA* Laboratory microbiology application shall process and store actual result reports received via LEDI HL7 messaging for the following sections:

- Bacteriology section
- Mycobacterium section
- Mycology section
- Virology
- Parasitology

#### 4.1.4 Functional Requirement 4

The *VISTA* Laboratory [LEDI] application shall store the incoming pending order in File #69.6 – Laboratory Pending Order File.

##### File #69.6 LAB PENDING ORDERS ENTRY FILE

File #69.6 - Lab Pending Orders Entry File	File #69.6 - Lab Pending Orders Entry File	File #69.6 - Lab Pending Orders Entry File
	.01 NAME (RF), [0;1]	.02 SEX (S), [0;2]
.03 DOB (D), [0;3]	.06 RACE (F), [.1;1]	.09 PAT ID (F), [0;9]
ORDERING SITE (P4'), [0;4]	COLLECTING SITE (P4'), [0;5]	ORDERING SITE UID (F), [0;6]
ORDERING SITE ACC # (F), [0;12]	SPECIMEN (P61'), [0;7]	COLLECTION SAMPLE (P62'), [0;8]
SPECIMEN STATUS (*P64.061'), [0;10]	FILE REF (P67'), [0;11]	VISIT NUMBER (NJ8,0), [0;13]
ORDERED DATE/TIME (D), [1;1]	COLLECTED DATE/TIME (D), [1;2]	11.1 COLLECTION END DATE/TIME (D), [1;9]
SHIPPED DATE/TIME (D), [1;3]	RECD DATE/TIME (D), [1;4]	TRANS DATE/TIME (D), [1;5]
DATA ACCEPT DATE/TIME (D), [1;6]	COMPLETE DATE/TIME (D), [1;7]	INCOMING MESS # (F), [1;8]
SHIPPING MANIFEST (F), [0;14]	20 ORDERED TESTS (Multiple-69.64), [2;0]	.01 NLT TEST (F), [0;1]
NLT CODE (F), [0;2]	REMOTE TEST NAME (F), [0;3]	REMOTE TEST # (F), [0;4]
REMOTE URGENCY (F), [0;5]	TEST STATUS (*P64.061'), [0;6]	OUT GOING MESS # (F), [0;8]
ACCESSION D/T (D), [0;7]	HOST UID (F), [0;9]	COMPLETE D/T (D), [0;10]
HOST TEST (P60'), [0;11]	HOST URGENCY (*P62.05'), [0;12]	ORDERING PROVIDER (F), [1;1]
700.04HL OBR-4 (F), [700.04;E1,200]	700.18HL OBR-18 (F), [700.18;E1,60]	700.19HL OBR-19 (F), [700.19;E1,60]
99 COMMENTS (Multiple-69.699), [99;0]	.01 COMMENTS (W), [0;1]	700 HL ENCODING CHARACTERS (F), 700;E1,5]
700.02 HL PID-2 (F), [700.02;E1,250]	700.04 HL PID-4 (F), [700.04;E1,250]	

### 4.1.5 Functional Requirement 5

The *VISTA* Laboratory Microbiology application, specifically File 63 – Lab Data (result storage) shall be modified by adding additional fields for urgency, CPRS order number, and the order type (i.e. original, reflex, add-on).

The following fields in File 63 - Lab Data, field .35 – Order Test field (multiple) shall be added to include the microbiology data resulting from LEDI generated orders under each of the above mentioned sections:

File 63 - Lab Data	File 63 - Lab Data	File 63 - Lab Data
.35 ORDERED TEST (Multiple-63.5)	4 LAB ORDER # (F)	8 SPECIMEN TOPOGRAPHY (P61')
.01 ORDERED TEST (FO)	5 ORDERED TYPE (*P64.061')	9 COLLECTION SAMPLE (P62')
2 ORDERED URGENCY (*P62.05')	6 ORDERING PROVIDER LOCAL (P200')	10 DISPOSITION (*P64.061')
3 CPRS ORDER # (P100'), [0;3]	7 ORDERING PROVIDER REMOTE (F)	11 DISPOSITION DATE/TIME (D)
12 DISPOSITION BY (P200'), [0;12]	13 LAB TEST ORDERED (P60'), [0;13]	14 PARENT TEST (P60'), [0;14]
15 PARENT NLT (F), [0;15]		

### 4.1.6 Functional Requirement 6

The *VISTA* Laboratory microbiology application shall be able to process results with deletions, additions and/or changes in organisms within the various sections in the “MI” subscript (to include Bacteriology, Mycobacterium, Mycology, Virology, Parasitology). And notify requesting provider via standard CPRS notification processes of result availability.

LRVR Enter/verify data (auto instrument)

LRMIEDZ Results entry

### 4.1.7 Functional Requirement 7

The *VISTA* Laboratory microbiology application shall be able to process results with deletions, additions and/or changes in antibiotics within the various sections in the “MI” subscript (to include Bacteriology and Mycobacterium). And notify requesting provider via standard CPRS notification processes of result availability.

LRVR Enter/verify data (auto instrument)

LRMIEDZ Results entry

### 4.1.8 Functional Requirement 8

The *VISTA* Laboratory microbiology application shall extract, use, and assign isolate identifications (IDs) to track specific organisms identified and reported via preliminary, final, supplemental, corrected and amended changes. This requires DD changes to File 63 – Laboratory Data.

.1 ISOLATE ID (FI), [1;1]

### **4.1.9 Functional Requirement 9**

The *VISTA* Laboratory microbiology application shall modify the 63.05 - MICROBIOLOGY SUB-FILE to include the following new fields:

.31 UID (F), [ORU;1]

### **4.1.10 Functional Requirement 10**

The *VISTA* Laboratory microbiology application shall store within each sub-file at the 0.1 node with the field name of ISOLATE ID.

### **4.1.11 Functional Requirement 11**

In addition to the normal log-in process, the *VISTA* Laboratory microbiology application shall be able to generate and store unique identifiers (UIDs) for microbiology orders and results. The UID^LRX API shall generate the UID and stores it in File 63.

.31 UID (F), [ORU;1]

### **4.1.12 Functional Requirement 12**

The *VISTA* Laboratory HL7 Messaging application shall generate exceptions for incomplete LEDI orders located in File #69.6.

Missing/invalid topography

Missing/invalid collection sample

Missing/invalid test order code

### **4.1.13 Functional Requirement 13**

The *VISTA* Laboratory HL7 Messaging application shall generate exceptions for LEDI results that cannot be processed.

Missing/invalid specimen id

Incorrect topography

### **4.1.14 Functional Requirement 14**

The *VISTA* Laboratory Microbiology application shall trigger an event to notify the LEDI application to return the results to the requestor, once an order is released and identified as LEDI associated. Likewise, this mechanism shall be used to check for a LEDI generated microbiology order.

#### **4.1.15 Functional Requirement 15**

The *VISTA* Laboratory Microbiology application shall use existing LEDI functionality to initiate and transmit LEDI HL7 result (ORU) messages.

#### **4.1.16 Functional Requirement 16**

The *VISTA* Laboratory Microbiology application, specifically File 63 – Lab Data (result storage) shall be modified by adding additional fields for LEDI result (ORU) node for the “MI” subscript for LEDI generated orders.

- .31 UID
- .32 Ordering site
- .33 Collection site
- .34 Host UID
- .342 Order Site UID
- .35 Ordered Test

#### **4.1.17 Functional Requirement 17**

The *VISTA* Laboratory Microbiology application shall store test order/result codes (LOINC/NLT/SNOMED CT) for data in File 63.

#### **4.1.18 Functional Requirement 18**

The *VISTA* Laboratory Microbiology application shall store the performing laboratory reported by the reference lab.

- .345 RELEASING SITE (P4'), [RF;1]
- .12 PRODUCING LABORATORY (Multiple-63.00012), [PL;0]
- .01 LAB DATA REFERENCE (F), [0;1]
- .02 INSTITUTION (P4'), [0;2]

#### **4.1.19 Functional Requirement 19**

The *VISTA* Laboratory Microbiology application shall display the performing laboratories and reporting laboratory on all reports.

#### **4.1.20 Functional Requirement 20**

The LEDI software shall create and add the new File 62.47 – Lab Code Mapping to the Laboratory application.

### **4.2 Anatomic Pathology (AP) Section Requirements**



### 4.2.1 Functional Requirement 21

The *VISTA* Laboratory AP application shall determine the File 60, field 64 NATIONAL VA LAB CODE - test order number, File 61 - type of specimen and File 62 - collection sample codes to use in the message.

### 4.2.2 Functional Requirement 21B

The *VISTA* Laboratory anatomic pathology application shall include appropriate SNOMED CT mappings in HL7 segments for the following files:

File 61 - Topography Field	File 62 - Collection Sample
20 SNOMED CT ID (XNJ12	21 SCT CODE STATUS (S)
21 SCT CODE STATUS (S)	22 SCT TOP CONCEPT (*P64.061')
22 SCT TOP CONCEPT (*P64.061')	23 SCT STATUS DATE (Multiple-61.023)
23 SCT STATUS DATE (Multiple-61.023)	.01 SCT STATUS DATE (D)
.01 SCT STATUS DATE (D)	1 STATUS CHANGE TO (S)
1 STATUS CHANGE TO (S)	24 SCT COMMENTS (Multiple-61.024)
24 SCT COMMENTS (Multiple-61.024)	.01 SCT COMMENT TYPE (MF)
.01 SCT COMMENT TYPE (MF)	.02 SCT COMMENT TEXT (F)
.02 SCT COMMENT TEXT (F)	

### 4.2.3 Functional Requirement 22

The *VISTA* Laboratory AP application for Surgical Pathology (SP), Cytopathology (CY) and Electron Microscopy (EM) shall accession outgoing orders using Log-in, anat path [LRAPLG] option.

### 4.2.4 Functional Requirement 23

The *Vista* Laboratory LEDI application shall process Anatomic Pathology orders.

### 4.2.5 Functional Requirement 24

The *VISTA* Laboratory AP application shall modify the AP log-in software to create and store UID, ORU data, and order number in Files #63, #68 and #69.

The *VISTA* Laboratory AP application shall process and store actual result reports received via LEDI HL7 messaging for the following sections:

- Surgical Pathology (SP) section
- Cytopathology (CY)
- Electron Microscopy (EM)

## 4.2.6 Functional Requirement 25

The *VISTA* Laboratory AP application shall modify AP Data Entry Options to continue processing the incoming HL7 orders.

- add link to file #69
- store order # in file #68
- any place where user is prompted to enter accession #, allow selection by UID, accession # or patient name
- store UID in file #68

## 4.2.7 Functional Requirement 26

The *VISTA* Laboratory AP application, specifically File 63 – Lab Data (result storage) shall be modified by adding additional fields for urgency, CPRS order number, and the order type (i.e. original, reflex, add-on). The following fields in File 63 - Lab Data, field .35 – Order Test field (multiple) shall be added to include the anatomic pathology data resulting from LEDI generated orders under each of the above mentioned sections:

File 63 - Lab Data	File 63 - Lab Data	File 63 - Lab Data
.35 ORDERED TEST (Multiple-63.5)	5 ORDERED TYPE (*P64.061')	10 DISPOSITION (*P64.061')
.01 ORDERED TEST (FO)	6 ORDERING PROVIDER LOCAL (P200')	11 DISPOSITION DATE/TIME (D)
2 ORDERED URGENCY (*P62.05')	7 ORDERING PROVIDER REMOTE (F)	12 DISPOSITION BY (P200')
3 CPRS ORDER # (P100')	8 SPECIMEN TOPOGRAPHY (P61')	13 LAB TEST ORDERED (P60')
4 LAB ORDER # (F)	9 COLLECTION SAMPLE (P62')	14 PARENT TEST (P60')
15 PARENT NLT (F), [0;15]		

The *VISTA* Laboratory anatomic pathology application shall support order/test codes for orderable procedures.

- File 60 – LABORATORY TEST
- File 64 - NATIONAL VA LAB CODE (P64'), [64;1]

## 4.2.8 Functional Requirement 27

The *VISTA* Laboratory application shall store the results related to the seven word processing fields along with their LOINC/NLT performing lab information. The seven word processing fields are:

- PREOP DIAGNOSIS SP Preoperative Diagnosis
- OPERATIVE FINDINGS SP Operative Findings
- POST-OP DIAGNOSIS SP Postoperative Diagnosis
- GROSS DESCRIPTION SP Gross Description
- MICROSCOPIC DESCRIPTION SP Microscopic Description
- FROZEN SECTION SP Frozen Section

- SURGICAL PATH DIAGNOSIS SP Surgical Path Diagnosis.

### **4.2.9 Functional Requirement 28**

*VISTA* Laboratory AP application shall allow the user to review the incoming results in order to accept or reject the result reports.

### **4.2.10 Functional Requirement 29**

The *VISTA* Laboratory AP application shall store incoming results that have been accepted in the File #63 LAB DATA. The option used is the LEDI Data Entry Option.

### **4.2.11 Functional Requirement 30**

The *VISTA* HL7 Messaging application shall generate exceptions for incomplete LEDI orders located in File #69.6 – LAB PENDING ORDERS ENTRY

- Missing/invalid topography
- Missing/invalid collection sample
- Missing/invalid test order code

### **4.2.12 Functional Requirement 31**

The *VISTA* HL7 Messaging application shall generate exceptions for LEDI results that cannot be processed.

- Missing/invalid specimen id
- Incorrect topography

### **4.2.13 Functional Requirement 32**

The *VISTA* Laboratory AP application shall process messages and store the orders in File #69.6 – LAB PENDING ORDERS ENTRY. (Reference the Table under Microbiology Requirements above.)

### **4.2.14 Functional Requirement 33**

The *VISTA* Laboratory AP application shall modify the Referral Patient Multi-purpose Accession [LRLEDI] option to process incoming HL7 orders for AP.

The *VISTA* Laboratory AP application shall use Referral Patient Multi-purpose Accession [LRLEDI] option in the Host lab, to capture the same data elements that are captured in Log-in, anat path [LRAPLG] option in the Collecting lab.

The data elements that are captured and stored in File #69:

- Patient Name – pointer to #2 or #67
- PATIENT LOCATION – stored in file #63 and #68
- Accession # - created – “ file #63 and 68
- DATE/TIME SPECIMEN TAKEN– 63
- PHYSICIAN - #63
- SPECIMEN SUBMITTED BY - #63
- SPECIMEN - #63
- WORKLOAD PROFILE (CY only) - #63, pointer to file 60
- DATE/TIME SPECIMEN RECEIVED - #63
- PATHOLOGIST - #63
- COMMENT - #63
- FROZEN SECTION – #63 - free text entry for SP only
- GROSS DESCRIPTION - #63 – free text entry for CY only
- RESIDENT OR EM TECH - #63 – EM only.

#### **4.2.15 Functional Requirement 34**

*VISTA* Laboratory application shall build HL7 result (ORU) messages with AP results that are triggered by normal laboratory verification/release event processes.

#### **4.2.16 Functional Requirement 35**

The *VISTA* Laboratory when releasing AP results via the Verify/release reports, anat path [LRAPR] option shall, when the accession was received via LEDI, trigger transmission of the report to the facility submitting the request. However, since the outgoing HL7 results are for referral patients, these reports shall not be stored in TIU.

#### **4.2.17 Functional Requirement 36**

The following modifications shall be required:

- Modify LRAPR and the LRARS option to call LA7VMSG when releasing LEDI AP reports which will build the outgoing HL7 message,
- Send the correct type of report or results that are associated: (1) original (or final), 2) modified, or 3) supplemental.

#### **4.2.18 Functional Requirement 37**

The *VISTA* Laboratory **AP** application shall use existing LEDI functionality to send LEDI result (ORU) messages via LA7VMSG API.

The *VISTA* Laboratory application shall trigger an event to check for a LEDI order by calling the LA7VMSG internal API.

#### **4.2.19 Functional Requirement 38**

The *VISTA* Laboratory AP application shall trigger an event to recall and review original, modified, and supplemental changes.

## **4.2.20 Functional Requirement 39**

The *VISTA* Laboratory SP and EM log-in process shall be modified to prompt for test procedure ordered by the provider.

## **4.2.21 Functional Requirement 40**

The *VISTA* Laboratory AP application shall add SPECIMEN TYPE prompt to the AP log-in process, Log-in, anat path [LRAPLG] option. The SPECIMEN TYPE shall have a pointer to the File 61 - Topography.

## **4.2.22 Functional Requirement 41**

The *VISTA* Laboratory AP application shall determine the test, topography, and collection sample that are required to be captured via the “backdoor method” and stored in Files #63, 68, and 69.

## **4.2.23 Functional Requirement 42**

The *VISTA* Laboratory AP application for SP, CY, and EM shall modify the prompt, Select Accession Number/Pt Name:, to accept UIDs as part of the accession selection criteria. The option names are as follows:

- SNOMED Coding, anat path [LRAPX]
- ICD9CM Coding, anat path [LRAPICD]
- Clinical HX/Gross Description/FS [LRAPDGD]
- FS/Gross/Micro/Dx [LRAPDGM]
- FS/Gross/Micro/DX/SNOMED Coding [LRAPDGS]
- FS/Gross/Micro/Dx/ICD9CM Coding [LRAPDGI]
- Supplementary Report, Anat Path [LRAPDSR]
- Spec Studies-EM; Immuno; Consult; Pic, Anat Path [LRAPDSS]
- Verify/release report, anat path [LRAPR]
- Supplementary report release, anat path [LRAPRS]
- Send an AP Alert [LRAP ALERT]

## **4.2.24 Functional Requirement 43**

The *VISTA* Laboratory AP application shall determine the appropriate urgency (routine, ASAP, STAT) to be applied to outgoing orders using the [LRAPLG] AP Log in option. This is used with the “backdoor” only.

## **4.2.25 Functional Requirement 44**

The *VISTA* Laboratory AP application shall add/change (data dictionary) to sub-files 63.02, 63.08, and 63.09.

Type of specimen and collection sample code:

Stored in SURGICAL PATHOLOGY sub-file (#63.08) in LAB DATA file (#63)

(#.06) SPECIMEN TOPOGRAPHY [6P:61]

(#.07) COLLECTION SAMPLE [7P:62]

Stored in CYTOPATHOLOGY sub-file (#63.09) in LAB DATA file (#63)

(#.06) SPECIMEN TOPOGRAPHY [6P:61]

(#.07) COLLECTION SAMPLE [7P:62]

Stored in EM sub-file (#63.02) in LAB DATA file (#63)

(#.06) SPECIMEN TOPOGRAPHY [6P:61]

(#.07) COLLECTION SAMPLE [7P:62]

The following fields in File 63 - Lab Data, field .35 – Order Test field (multiple) shall be added to include the anatomic pathology data resulting from LEDI generated orders under each of the above mentioned sections:

File 63 - Lab Data	File 63 - Lab Data	File 63 - Lab Data
.35 ORDERED TEST (Multiple-63.5)	5 ORDERED TYPE (*P64.061')	10 DISPOSITION (*P64.061')
.01 ORDERED TEST (FO)	6 ORDERING PROVIDER LOCAL (P200')	11 DISPOSITION DATE/TIME (D)
2 ORDERED URGENCY (*P62.05')	7 ORDERING PROVIDER REMOTE (F)	12 DISPOSITION BY (P200')
3 CPRS ORDER # (P100')	8 SPECIMEN TOPOGRAPHY (P61')	13 LAB TEST ORDERED (P60')
4 LAB ORDER # (F)	9 COLLECTION SAMPLE (P62')	14 PARENT TEST (P60')
.35 ORDERED TEST (Multiple-63.5)	5 ORDERED TYPE (*P64.061')	10 DISPOSITION (*P64.061')
15 PARENT NLT (F), [0;15]		

#### 4.2.26 Functional Requirement 45

The *VISTA* Laboratory AP application shall create the task required to link AP accessions to File 69 Laboratory Order File by creating an order number and storing the order number in File 68 – Accession File at the time the accession is created.

Option Log-in, anat path [LRAPLG] shall be modified, when creating an entry in the ACCESSION file (#68), to create a corresponding order in the LAB ORDER ENTRY file (#69) linked to the accession. The accession shall be updated with the corresponding order information in accordance with current business rules in effect for “CH” and “MI” subscript tests.

#### 4.2.27 Functional Requirement 46

The *VISTA* Laboratory File 63 – Test Results shall be modified by adding the fields for LEDI “ORU” node for the “SP”, “CY”, and “EM” subscripts. Test result storage shall be enhanced to support recording the accessioning division of the order.

The *VISTA* Laboratory File 63 – Test Results shall be modified by adding the fields to support/use accession UIDs (unique identifiers) as specimen/accession identifier.

- .31 UID
- .32 Ordering site
- .33 Collection site
- .34 Host UID
- .342 Order Site UID
- .35 Ordered Test

#### **4.2.28 Functional Requirement 47**

The *VISTA* Laboratory File 63 – Test Results shall be modified by adding the fields to support accessioning division.

#### **4.2.29 Functional Requirement 48**

The *VISTA* Laboratory AP application shall build corresponding orders in File #69 with the [LRAPLG] AP log in option.

#### **4.2.30 Functional Requirement 49**

The *Vista* Laboratory application shall store the performing laboratory reported by the reference laboratory. Support recoding the performing laboratory for the various components of microbiology and anatomic pathology reports. The *Vista* Laboratory application shall be able to record and display reports wherein various components of a given report are performed by multiple/discrete laboratories.

The following fields in File 63 - Lab Data, field .12 – PRODUCING LABORATORY field (multiple) shall be added to support this functionality:

- .01 LAB DATA REFERENCE (F), [0;1]
- .02 INSTITUTION (P4'), [0;2]

#### **4.2.31 Functional Requirement 50**

LEDI IV added new functionality so that if users have the LRDATA key and enter a tilde at the lab report result prompt, they can change the units/reference ranges that display for lab tests.

#### **4.2.32 Functional Requirement 51**

The *VISTA* Laboratory application shall, when the pathologist is releasing the case and it is within the Laboratory software, generate CPRS AP alerts/notifications to the following mandatory recipients:

The recipients should include:

1. Ordering provider
2. If patient inpatient as of specimen date/time then
3. Inpatient primary care provider
4. Inpatient attending
5. Outpatient primary and associate care providers
6. Any additional recipients specified by the user
7. If related surgery case then
8. Current surgeon if different from surgeon used as ordering provider when specimen logged in.
9. Attending surgeon

The pathologist during release of the case can specify additional users/recipients or mail groups to receive the CPRS notification. The list of recipients will be displayed to the releasing pathologist/user.

## **4.3 SNOMED CT Requirements**

Listed here are the SNOMED CT requirements that are required for LEDI. Some of the Requirements for SNOMED CT were contained in a separate patch known as LEX\*2\*41. Two of the SNOMED CT specific requirements from the LEX\*2\*41 patch have been removed from this SRS.

### **4.3.1 Functional Requirement 52**

Data shall be retrieved from the following *VISTA* Laboratory files and submitted to Standardization & Terminology Services (STS) for data standardization of the SNOMED CT codes for the Microbiology data:

- (1) File 61 - Topography Field
- (2) File 61.2 - Etiology Field
- (3) File 62 - Collection Sample
- Plus, one (1) file that is mapped to LOINC
- (4) File 62.06 - Antimicrobial Susceptibility

### **4.3.2 Functional Requirement 53**

Data shall be retrieved from the following *VISTA* Laboratory files and submitted to STS for data standardization of the SNOMED CT codes for the general lab and AP data:

- (1) File 61 - Topography Field
- (2) File 61.2 - Etiology Field
- (3) File 62 - Collection Sample
- Plus, one (1) file that is mapped to LOINC
- (4) File 62.06 - Antimicrobial Susceptibility

### **4.3.3 Functional Requirement 54**

Depending upon the utilities that shall be provided by the Lexicon Utility, new reports of mapped and unmapped SNOMED CT codes shall be available through the *VISTA* Laboratory application.

AEL Add/Edit Local Identifier [LA7V 62.47 LOCAL IDENTIFIER]  
CMC Clone a Message Configuration [LA7V 62.47 CLONE MSG CONFIG]  
CSM Code/Set Mismatches [LA7V 62.47 PRINT CS MISMATCHES]  
ECH Error Code Help [LA7V 62.47 ERROR CODE HELP]  
FI Find Identifier [LA7V 62.47 FIND IDENTIFIER]  
PL Print Local Codes [LA7V 62.47 PRINT LOCAL]  
PMC Print by Message Configuration [LA7V 62.47 PRINT BY MSG CONFIG]  
PS Print Susceptibilities [LA7V 62.47 PRINT SUSC]



### 4.3.4 Functional Requirement 55

When the *VistA* Laboratory application receives a patient care term from a non-VA information system and the clinical term is not known to the VA clinical Lexicon;

The receiving *VistA* application shall store the clinical term and display the term in a report to the provider. It shall also notify STS via supported API of the new term to be mediated and repositioned.

NOTE: In the Lexicon, the unknown term could be one of the following types:

- Valid national term that has not been represented in the Lexicon due to sequencing or database update lag. These unknown terms may originate within VA or a clinical partner.
- New valid clinical terms that are not yet modeled and issued by the national code set provider.
- Term is a local term originating with the clinical data provider partner that may or may not eventually be included in the national code set.

### 4.3.5 Functional Requirement 56

The *VistA* application shall use the established hierarchy to retrieve SNOMED CT codes for organisms. The entries in LAB ELECTRONIC CODES file (#64.061) shall be created to map LAB DATA file (#63) data fields to respective SCT hierarchy for organisms.

NAME	SCT TOP CONCEPT
-----	
MI Fungus/Yeast	SCT Organism
MI Mycobacterium	SCT Organism
MI Organism Db	SCT Organism
MI Parasite	SCT Organism
MI Virus	SCT Organism

### 4.3.6 Functional Requirement 57

The *VistA* application shall return a SNOMED CT code for normal flora results

The software shall map SNOMED CT term as follows:

264868006 to “no growth”  
47492008 to “none seen”  
23506009 to “normal flora”

### 4.3.7 Functional Requirement 58

The *VistA* application shall notify at least the Laboratory Information Manager (LIM) for exception handling instances. The *VistA* application shall send an exception handling notification to the LAB –

MESSAGING mailman group via the Kernel Alert system using Kernel action alerts that will display the exception and the related HL7 message using the standard Lab Messaging message display functionality provided by option Display Lab Universal Interface Message [LA7 PRINT LAB UI MESSAGE].

### **4.3.8 Functional Requirement 59**

The *VISTA* Laboratory application shall restrict the modification to the SNOMED CT .01 field in all the above mentioned SNOMED-related files by personnel within the local *VISTA* Laboratory package. When someone enters a new term STS shall receive an alert message.

#### **4.3.8.1 Functional Requirement 59B**

The *VISTA* Laboratory application shall remove LAYGO in field COLLECTION SAMPLE field (#.01) of the COLLECTION SAMPLE sub-field (#60.03) of the LABORATORY TEST file (#60) so that sites are unable to add collection samples. This is to prevent accidental additions to COLLECTION SAMPLE file #62 when adding a collection sample to a laboratory test configuration. Additions to file #62 are now monitored and tracked by STS for data standardization and avoiding accidental triggering.

### **4.3.9 Functional Requirement 60**

The *VISTA* Laboratory application shall load the mapped SNOMED CT codes at each site. After the *VISTA* Laboratory loads the mapped SNOMED CT codes at each site, the *VISTA* Laboratory shall send a notification message via the “LAB MAPPING” mail group. It is a “canned” message that goes out to each site and reads as follows:

“Initial seeding of SNOMED CT assignments for terms in the following files complete effective (date of initial SNOMED CT Code Load):

TOPOGRAPHY FIELD  
ETIOLOGY FIELD  
COLLECTION SAMPLE

For interoperability purposes, SNOMED CT fields have been added to your Topography, Etiology, and Collection Sample Files and where appropriate the fields have been populated with a SNOMED CT code. No changes have been made to data in existing fields within these files. These codes will only be utilized during transmission of verified lab results as part of the LEDI IV software and for HDR/CHDR projects. Questions regarding a particular SNOMED CT assignment should be directed to “VA OIT VHIT HDS STS LAB QA” outlook mail group. Sites who wish to review SNOMED CT assignments may send an e-mail message to S.LRLABSERVER@domain name, Subject: SNOMED, to review the SNOMED LRLABSERVER report.”

### **4.3.10 Functional Requirement 61**

The *VISTA* Laboratory application shall create a SNOMED CT Exception Handling event when one of the following three triggers occur:

1. Event encountered while loading STS mapped SNOMED CT code into the target database files
2. Loading new or additional SNOMED CT terms received from another system via HL7 messaging
3. New terms are entered or existing terms updated locally.

The three *Vista* Laboratory files that are designated for SNOMED CT Exception Handling triggering events are:

File 61 - Topography Field  
File 61.2 - Etiology Field  
File 62 - Collection Sample

### 4.3.11 Functional Requirement 62

When the site's IRM performs the mapping load of the SNOMED CT update AND the Scheduled Date is reached on which the Lab site checks its Lab mappings against the Lexicon SCT Codes, *Vista* Lab checks the Lab site's Topography, Etiology and Collection Sample mappings against the SNOMED CT codes belonging to the LEXICON.

### 4.3.12 Functional Requirement 63

The updated checking to be followed by *Vista* Lab for Update Exceptions:

If *Vista* Lab mapping load SCT Status Code= "P", or "S", or "L", or "R", or "X", or "LN", or "RN":

Refer to SCT Code Table below and IF an Exception **IS** Found:

Generate the Load Exception Alert from *Vista* to STS, Generate a *Vista* MailMan message to the *Vista* Lab Mapping group and to the *Vista* G.LMI group that reads:

"Due to a recent Lexicon patch that updated the SNOMED CT (SCT) code set at your facility, some of the Lab entries in the TOPOGRAPHY FIELD file (#61), COLLECTION SAMPLE file (#62), and ETIOLOGY FIELD file (#61.2) are mapped to SCT codes that have been deprecated or have other exceptions. Standards & Terminology Services (STS) has received notification of these exceptions and will provide your site with a new SCT mapping file within several weeks or less.

NOTE: YOU DO NOT NEED TO DO ANYTHING UNTIL YOU GET THE UPDATED MAPPING FILE FROM STS.

The following SNOMED CT exceptions have been found at XXXXXXXX VAMC."

Where "X" represents either the File # or the name of the VA Medical Center.

If *Vista* Lab mapping load SCT Status Code= "P", or "S", or "L", or "R", or "X", or "LN", or "RN", or 'E':

Refer to SCT Code Table below and IF an Exception is **NOT** Found:

Do not generate a *Vista* alert to STS. Do not generate a *Vista* Mailman message to *Vista* Lab Mapping group or to the *Vista* G.LMI group.

SCT Code Table with Defined Actions for *VistA* Update Exception Logic

SCT Status	Action if Lexicon Exception found during scheduled task
<b>P:</b> SNOMED Preferred term	Send Alert, and update status of entry to "E".
<b>S:</b> SNOMED Synonym term	Send Alert, and update status of entry to "E".
<b>L:</b> Local spelling of a SNOMED term (miss-spelled)	Send Alert, and update status of entry to "E".
<b>R:</b> Referred to national coders to determine if acceptable	This entry shouldn't be mapped to a SCT id.  If for some reason it is mapped, and an exception was found, then send an alert and update the status to "E".
<b>X:</b> No applicable mapping	This entry should not be mapped to a SCT id.  If for some reason it is mapped, and an exception was found, then send an alert and update the status to "E".
<b>LN:</b> New term pending LEXICON release/update	If the entry now exists in the Lexicon, then check the status in the Lexicon.  If it was active in the Lexicon, then update the status to "P", "S", or "L" accordingly.  If it was inactive in the Lexicon, then send an alert to STS and update the status of the entry to "E".
<b>RN:</b> STS Request New Code	This entry shouldn't be mapped to a SCT id.  If for some reason it is mapped, and an exception was found, then send an alert and update the status to "E".
<b>E:</b> Error encountered when applying STS disposition to file entry.	Do not send an alert.

### **4.3.13 Functional Requirement 64**

The *VISTA* Laboratory application software shall identify and distinguish between the three types of SNOMED CT Exception Handling events was produced and coded them as follows:

- 1 = Load Exception Event
- 2 = Reference Laboratory Exception Event
- 3 = Add/Edit Exception Event.

The *VISTA* Laboratory application shall produce a temporary file for each Exception Handling event that occurs. Each temp file will meet with the following criteria:

- Provide a single transaction number and date/time stamp per Exception Handling event
- Use unique Transaction numbers for every Exception event and not recycle or reuse them, even if there is a change to the same entry in the *VISTA* Lab package
- Identify Exception Handling event type utilizing the code system (1=Load Exception, 2=Reference Lab Exception, 3=Add/Edit Exception)
- Identify *VISTA* Lab file origin (61=Etiology, 61.2=Topography, 62=Collection Sample)

### **4.3.14 Functional Requirement 65**

The *VISTA* Laboratory application shall access the HDI\*1\*7 API, so that *VISTA* can send SNOMED CT Exception Handling event data.

The *VISTA* Laboratory application shall push the data to the HDI\*1\*7 API, the Lab software sends one transaction at a time to the HDI\*1\*7 API so STS can fix the issue and return a resolution.

### **4.3.15 Functional Requirement 66**

The *VISTA* Laboratory application shall track all SNOMED CT Exception Handling event transactions sent to HDI\*1\*7 API. Integrated testing is required to confirm that messages are successfully passed to the HDI\*1\*7 API.

Once the event data is sent to the API, *VISTA* Lab updates the temp file mentioned earlier with the following data:

- Date/time the Exception Handling event occurred
- Exception Handling event code
- Transaction Number

Tracking data is maintained only as long as the temporary file is available. It's not a permanent record.

### **4.3.16 Functional Requirement 67**

The *VISTA* Laboratory application shall update the Term (Terminology) Status field with an "R" to indicate a SNOMED CT Exception Handling event has been sent to STS for resolution. This allows the Lab Information Manager to track that an Exception Handling event occurred by querying on the respective *VISTA* Lab file and viewing a status notation of "R" for referred. When a disposition is returned by STS it will be stored with the entry in the target file. *VISTA* Laboratory will support the statuses/dispositions as outlined above in the SCT Code table.

'P' FOR PREFERRED TERM;

'S' FOR SYNONYM;

'L' FOR LOCAL;

'R' FOR REFERRED;

'X' FOR NO APPLICABLE MAPPING;

'LN' FOR NEW TERM PENDING LEXICON UPDATE;

'RN' FOR STS REQUEST NEW CODE;

'E' FOR ERROR;

### **4.3.17 Functional Requirement 68**

The *VISTA* Laboratory application shall process the text files for each of the following scenarios:

- (1) Multiple Exception Handling resolutions for multiple *VISTA* Laboratory sites
- (2) Multiple Exception Handling resolutions for a single *VISTA* Laboratory site
- (3) Single Exception Handling resolution for a single *VISTA* Laboratory site

### **4.3.18 Functional Requirement 69**

STS shall send resolutions via FTP transfer to each site.

**NOTE:** More information concerning this issue shall be in the Software Design Document (SDD).

### **4.3.19 Functional Requirement 70**

The *VISTA* Laboratory application shall query the SNOMED CT LEXICON to determine the appropriate status assignment if a resolution returns a SNOMED CT Code.

### **4.3.20 Functional Requirement 71**

The *VISTA* Laboratory application shall build functionality so that the *VISTA* local lab servers take the resolution data and populate the SNOMED CT support fields within the Topography, Etiology, or Collection Sample files.

### **4.3.21 Functional Requirement 72**

The *VISTA* Laboratory application shall create a new SNOMED CT Load Exception Handling event, if for some reason, the resolution is not able to be filed (such as the local site made a change between when the initial Exception was reported and resolved).

### **4.3.22 Functional Requirement 73**

The *VISTA* Laboratory application shall use Lexicon APIs to retrieve SNOMED CT codes: `$$CODE^LEXTRAN`, `$$TEXT^LEXTRAN`, `$$TEXT4CS^LEXTRAN`.

### **4.3.23 Functional Requirement 74**

There is a new mail group entitled LAB MAPPING for sending automated system messages to the recipients when certain fields of monitored files are added and/or modified.

## **4.4 LOINC Requirements**

LOINC stands for Logical Observation Identifier Names and Codes.

### **4.4.1 Functional Requirement 75**

The *VISTA* Laboratory application shall provide the logic for mapping Micro and AP tests to LOINC codes.

The following options shall provide the ability to map tests to the respective LOINC codes:

- Add/Edit Local Identifier [LA7V 62.47 LOCAL IDENTIFIER]
- Map Lab Tests to Default LOINC Code [LR LOINC MAP DEFAULT]
- Map Lab Tests to LOINC Codes [LR LOINC MAP]
- Map/Unmap Antimicrobial Default LOINC Code [LR LOINC MAP ANTIMICROBIAL]

### **4.4.2 Functional Requirement 76**

The *VISTA* Laboratory application shall provide the support and awareness to successfully pass LOINC codes with Micro and AP results.

### **4.4.3 Functional Requirement 77**

The *VISTA* Laboratory application shall use standardized LOINC codes. Standardizing LOINC Codes is an HDR requirement.

- Option Map All Susceptibilities [LA7V 62.47 MAP SUSCS] shall map local terms matching LOINC terms.
- Option Edit Susceptibility [LA7V 62.47 EDIT SUSC] shall allow LIM to map local antibiotics to LOINC terms as specified by STS.

#### **4.4.4 Functional Requirement 78**

The *VISTA* Laboratory application shall add hierarchy codes to File #64.061. The hierarchy codes are as follows:



NAME: SCT Attribute	TYPE: GENERAL	
DESCRIPTION: SCT Hierarchy Top 3	SUBTYPE: SCT Heir	SCREEN: SCT
LEX ABBREV: ATT		STORAGE FILE: 61.2
NAME: SCT Disorder	TYPE: GENERAL	
DESCRIPTION: SCT Hierarchy	SUBTYPE: SCT Heir	SCREEN: SCT
LEX ABBREV: DIS		STORAGE FILE: 61.2
NAME: SCT Environment	TYPE: GENERAL	
DESCRIPTION: SCT Hierarchy	SUBTYPE: SCT Heir	SCREEN: SCT
LEX ABBREV: ENV		STORAGE FILE: 61.2
NAME: SCT Environment/Location	TYPE: GENERAL	
DESCRIPTION: SCT Hierarchy	SUBTYPE: SCT Heir	SCREEN: SCT
LEX ABBREV: ENL		STORAGE FILE: 61.2
NAME: SCT Events	TYPE: GENERAL	
DESCRIPTION: SCT Hierarchy	SUBTYPE: SCT Heir	SCREEN: SCT
LEX ABBREV: EVE		STORAGE FILE: 61.2
NAME: SCT Finding	TYPE: GENERAL	
DESCRIPTION: SCT Hierarchy	SUBTYPE: SCT Heir	SCREEN: SCT
LEX ABBREV: FND		STORAGE FILE: 61.2
NAME: SCT Organism	TYPE: GENERAL	
DESCRIPTION: SCT Hierarchy	SUBTYPE: SCT Heir	SCREEN: SCT
LEX ABBREV: ORG		STORAGE FILE: 61.2
NAME: SCT Physical Force	TYPE: GENERAL	
DESCRIPTION: SCT Hierarchy	SUBTYPE: SCT Heir	SCREEN: SCT
LEX ABBREV: FOR		STORAGE FILE: 61.2
NAME: SCT Physical Object	TYPE: GENERAL	
DESCRIPTION: SCT Hierarchy	SUBTYPE: SCT Heir	SCREEN: SCT
LEX ABBREV: OBJ		STORAGE FILE: 61.2
NAME: SCT Procedure	TYPE: GENERAL	
DESCRIPTION: SCT Hierarchy	SUBTYPE: SCT Heir	SCREEN: SCT
LEX ABBREV: PRC		STORAGE FILE: 61.2
NAME: SCT Product	TYPE: GENERAL	
DESCRIPTION: SCT Hierarchy	SUBTYPE: SCT Heir	SCREEN: SCT
LEX ABBREV: PRD		STORAGE FILE: 61.2
NAME: SCT Qualifier Value	TYPE: GENERAL	
DESCRIPTION: SCT Hierarchy Top 3	SUBTYPE: SCT Heir	SCREEN: SCT
LEX ABBREV: QUV		STORAGE FILE: 61.2
NAME: SCT Regime/Therapy	TYPE: GENERAL	
DESCRIPTION: SCT Hierarchy	SUBTYPE: SCT Heir	SCREEN: SCT
LEX ABBREV: REG		STORAGE FILE: 61.2
NAME: SCT Substance	TYPE: GENERAL	
DESCRIPTION: SCT Hierarchy	SUBTYPE: SCT Heir	SCREEN: SCT
LEX ABBREV: SUB		STORAGE FILE: 61.2

## **4.5 Non-Functional Requirements**

### **4.5.1 Non-Functional Requirement 1**

Laboratory is subscribing to DBIA1373 to facilitate use of HL7 protocols to store events related information concerning HL7 messages.

### **4.5.2 Non-Functional Requirement 2**

The correct set/kill logic for cross-references on “DATE/TIME RESULTS AVAILABLE” field (#21) within SPECIMEN sub-file of LAB ORDER ENTRY file #69 which caused undefined errors during development testing.

## 5 File 63 Remediation Utilities

### 5.1 Overview

The remediation tools will analyze, identify, and report on the data dictionary configuration errors identified in the *VistA* Laboratory Package LAB DATA File (#63) with regard to the creation of fields that store:

Tool #1: Antibiotic susceptibilities, associated interpretations and display screens.

Tool #2: Chemistry/Hematology laboratory results.

By way of background, users at the sites created fields that store test data through FileMan that did not always adhere to instructions or did not use the approved laboratory options leading to the errors in LAB DATA File (#63). The known errors from an analysis of the LEDI IV test sites are:

- Missing fields.
- Fields are defined at the wrong global location.
- Storing accompanying fields with wrong field numbers.
- Incorrect data type input transforms. (Transforms control how the data can be entered.)
- Help text that provides the user with incorrect data entry instructions.

The software tool will run in Analyze and Report mode during the KIDS install of LEDI IV. The error report it generates will allow users with the appropriate access to manually repair the identified errors after the install process is complete. There is no automatic repair of the LAB DATA file that occurs as part of the LEDI IV install.

The tools will automatically run once per month in analyze and report mode (as part of the scheduled task LRTASK NIGHTY) and notify a pre-defined mail group if an error is found.

Designated lab users, with *VistA* Programmer access, will be able to run the File 63 Remediation tool in analyze & repair mode. During the manual repairs, users may continue accessioning and resulting orders, as long as they are not the same as those subscripts being repaired.

The two functional areas of the lab package supported by this functionality are:

- Microbiology organism antibiotic susceptibility storage.
- Chemistry lab results data storage.

### 5.2 Functional Requirements

#### 5.2.1 Functional Requirement 1

This software utility is run automatically after installation of LEDI IV as well as once a month via the LR TASK - NIGHTY background job.

### **5.2.2 Functional Requirement 2**

This software utility can be run manually by users with *VistA* Programmer access at a time of their choosing after the LEDI IV install is complete to analyze and repair the lab data dictionary.

### **5.2.3 Functional Requirement 3**

Detect incorrectly defined antibiotic fields within LAB DATA File (#63).

### **5.2.4 Functional Requirement 4**

Report incorrectly defined antibiotic fields within LAB DATA File (#63) if found. Report a “negative” report if no errors are found when run in repair mode.

### **5.2.5 Functional Requirement 5**

Generates and sends a report in a *VistA* MailMan e-mail and transmits it to the members of the site’s local *VistA* mail group LMI.

### **5.2.6 Functional Requirement 6**

When run in repair mode, correct the incorrectly defined antibiotic fields within LAB DATA File (#63) and any data instances related to the File (#63) errors. For instance, data that exists in an incorrect field location.

### **5.2.7 Functional Requirement 7**

Detect incorrectly defined Clinical Chemistry (Chemistry and Hematology) data names in LABORATORY TEST File (#60) and LAB DATA File (#63).

### **5.2.8 Functional Requirement 8**

Report incorrectly defined Clinical Chemistry (Chemistry and Hematology) data names in LAB DATA File (#63).

### **5.2.9 Functional Requirement 9**

Generates a report of incorrectly defined Clinical Chemistry (Chemistry and Hematology) data names into a *VistA* MailMan e-mail and transmit it to the members of the *VistA* mail group LMI.

### **5.2.10 Functional Requirement 10**

When run in repair mode, correct incorrectly defined Clinical Pathology (Chemistry and Hematology) data names in and LAB DATA File (#63) and any related result data.

## **5.3 System Features**

When an error(s) is found, the system will generate up to two email messages to the “LMI” mail group monthly. One email message will be for the Antibiotic Microbiology fields corrected and the data dictionary of LAB DATA File (#63) corrections.

The tool will automatically run in analyze mode once each month (as part of the scheduled task LRTASK NIGHTY) and only send an error report if an error is found in a Mailman message to the LMI mail group.

## 5.4 Usability Specifications

N/A.

## 5.5 User Class Characteristics

**Background:** LAB DATA File (#63) contains lab test results. This file was one of the first created within Decentralized Hospital Computer Program (DHCP)/VistA. Over time, medical centers have introduced configuration errors within the LAB DATA File (#63). Those errors have not affected nationally released applications until now. The Laboratory Electronic Data Interchange (LEDI) Anatomic Pathology (AP) & Microbiology (Micro) application requires a correctly configured LAB DATA File (#63) to provide functionality to users. All medical centers’ production LAB DATA File (#63) should undergo analysis and reporting after the LEDI IV software is installed.

### **Analysis and Reporting Description:**

1. Upon install of the LAB DATA File (#63) analysis and reporting tools, the post-install process automatically runs the analysis tools (for known potential errors).
2. The patch automatically creates a report of errors that the tools have identified.

## 6 Code Change Requests

### 6.1 Change Requests Impacting User Functionality

1. **CCR 00005519 Change AN2 cross-reference to use the first 20 characters of the location.** This will affect the users if they customized the LRRMM TASK MAIL LAB REPORTS option by setting LRRLROC or LRRLST in the Entry Action. Users must now use the first 20 characters of the Institution Name.
2. **CCR 00006164 Change How Non-Performing Tests Operate in LEDI IV.** When individual tests from an Exploded panel are not performed, LEDI IV now sends back an OBX (Observation Result) to the receiving system letting them know which tests were not performed. The HL7 message going back to the collecting site will contain a result of ‘canc’. This way the site can use EA to accept the result coming in.
3. **CR00005538 Prevent user from being able to cancel tests that have results.** The option to allow users to 'Delete entire order or individual test' has been modified to prevent a user from “Not Performing” (NP) any tests that have results. This applies even if the results have not been verified yet.

4. **Code CR00005156 Add a parameter to control the sending of HL7 messages for various area of VistA Laboratory.** This CR enables or disables the user from sending orders and results via LEDI, behind the scenes. There is no user-set parameter with this feature. The parameter is set to "Disabled" or "Enabled" for each section of Laboratory sections ("CH", "MI", and "AP"). This parameter can be set so that each section of laboratory can be enabled or disabled for each agency such as the VA.
  
5. **Code CCR00005504 LEDI IV Enhancement: Parameter for Performing Lab.** LEDI IV brought in functionality to identify the performing lab for the entire AP or Micro report, or for specific sections. The display of the performing lab selection is cumbersome for sites which often have only one performing site. Yet, the performing lab prompt is displayed more than once, which adds additional key strokes/returns to pass through. The users now have a parameter to identify the performing lab for AP/Micro reports. This parameter applies to all reports so that individual assignments aren't necessary.
  
6. **Code CCR00008076 Sort File #63 Remediation Report for CH.** The File 63 Remediation results Mailman Message is now sorted for the CH subscript errors.
  
7. **Code CCR00008693 Enable LEDI for Micro and AP.** The functionality to electronically transmit AP orders and AP and Micro results via the LEDI interface had been disabled by default for LEDI IV. At the time, this functionality was planned to be implemented with the future release of a COTS Laboratory System. Since that Laboratory System project was halted for re-evaluation, this functionality will need to be re-enabled for LEDI as part of the LEDI IV Update patch.
  
8. **Code CCR00008554 NAME field needs to be made editable in files 61, 62, 61.2.** The NAME field (#.01) in the TOPOGRAPHY FIELD file (#61), COLLECTION SAMPLE file (#62), and ETIOLOGY FIELD file (#61.2) are now editable with the LEDI IV Update patch. These fields were made non-editable in the LEDI IV release.
  
9. **Code CCR00008555 AP Accession Number Can Get Skipped If User Times Out**  
If multiple users are logging in AP specimens to the same Accession Area at the same time and a user gets timed out of VistA Lab due to inactivity (e.g., walking away to do another task), there is a possibility that the number that they were working on can possibly get skipped unless someone manually chooses it. The same result can occur if a user deletes an accession number.

The LEDI IV Update patch has a new parameter called "Method of assigning a default AP accession number". The user can set the parameter to *First available number* where the system starts searching from **zero**, takes the first available accession number and defaults that number to the next accession. Or, the user may choose to set the parameter to *Next Available Sequential Number*. With this option the system searches from the last assigned number for the AP accession area. The system then finds and defaults the next available number in sequence as the AP accession number.

This is a package level parameter that is available across AP sections, i.e. Surgical Pathology, Cytology and Electron Microscopy. If not set, the default parameter is *First Available Number*

10. **Code CR 00004828 Option to check SCT mappings against the Lexicon**  
When a SNOMED CT - (SCT Mapping) file is loaded, the system validates each SNOMED CT ID against the Lexicon. If there is an exception found (e.g., the code is inactive) the system sends

- a. The SCT CODE STATUS field (#21) for the entry will be updated to 'Error',
- b. An HDI exception alert will be sent to STS,
- c. A MailMan message will be sent to the G.LMI and G.LAB MESSAGING Mail Groups with a list of the exceptions found.

The Performing Laboratory information should display after the e-signature - not before. In the user's own words: "The reason that it is a concern is because every outside report we get the address and location are after the signature of the pathologist. With it before, the signature gets lost and it is difficult to find".

```

- - - - -
MEDICAL RECORD | SURGICAL PATHOLOGY
- - - - -
PATHOLOGY REPORT Accession No. SP12 SP 12 8
Submitted by: LRUSER,ONE Date obtained: Nov 09, 2012 10:47
Specimen (Received Nov 09, 2012 10:47):
TISSUE
*** SUPPLEMENTARY REPORT HAS BEEN ADDED ***
*** REFER TO BOTTOM OF REPORT ***
Comment:
TESTING CCR8896
- - - - -
BRIEF CLINICAL HISTORY:
PREOPERATIVE DIAGNOSIS:
OPERATIVE FINDINGS:
POSTOPERATIVE DIAGNOSIS:
Surgeon/physician: ONE LRUSER
=====
PATHOLOGY REPORT Accession No. SP12 SP 12 8
- - - - -
Gross description:
THIS IS A VERRRRRRRRRRRRRRRRRRRRRRRRRRYYYYYYYYYYYYYYYYYYY LONG GROSS
DESCRIPTION. DSFDSA FDSA FDSA F DSFDSAFADSFADSF DFSFADSFADSF

```

DSAFDSAF DSAFADSFDSA DSFDSAFADSF FADSFDSF DFSFADSF.

Microscopic exam/diagnosis:

THIS IS A MICROSCOPIC DESCRIPTUION. THE SPECIMEN IS SMALL AND HAS  
BUMPS. IT IS NORMAL LOOKING. NO LESIONS FOUND.

SUPPLEMENTARY REPORT(S):

Supplementary Report Date: NOV 09, 2012@10:53

THIS IS THE FIRST SUPPLEMNTARY DESCRIPTION ADDED.

/es/ ONE LRUSER

CS

Signed Nov 09, 2012@10:57

Performing Laboratory:

Surgical Pathology Report Performed By:

ALBANY VA MEDICAL CENTER

VA MEDICAL CENTER 1 3RD ST. ALBANY, NY 12180-0097

(End of report)

ONE LRUSER

lmt | Date Nov 09, 2012

BCMA,ONE-PATIENT

STANDARD FORM 515

ID:666-33-0001 SEX:M DOB:04/07/1935 AGE: 77 LOC:BCMA

ADM:JAN 29,2002 DX:CHF

PCP: Thirtynine Radtech

## 12. Code CCR00009165 On AP reports On AP reports, change AFIP to Joint Pathology Center (JPC)

The Joint Pathology Center (JPC) has replaced the AFIP for certain Anatomic Pathology test results. Anatomic Pathology reports need to be updated to reflect the JPC label.

# 7 General System Requirements

## 7.1 Performance Requirements

All participants must provide adequate disk space to store HL7 messages, ensure reasonable response time for message processing, and minimize system downtime.

## 7.2 Design Constraints

All dates and times shall be Year 2000 compliant. The Year 2000 problem in automated information systems refers to the ability of the computerized system to accurately handle date data and algorithms for calendar activities in and beyond the Year 2000. All participating systems must be Year 2000 compliant.

## 7.3 Assumptions

There are no assumptions identified in this SRS.



## **7.4 Security**

All participating systems must maintain their own Certification and Accreditation certifications as required by their governing security, privacy act, and data protection regulations and laws.

## **7.5 Portability**

The software shall use VA-standards based M language. It shall be applicable to the standard platforms used at all VA sites which include:

- DEC Alpha/NT/Cache
- DEC Alpha/VMS/Cach

## 8 Attachment A – Approval Signatures

This section is used to document the approval of the Requirements Specification Document during the Formal Review. The review should be ideally conducted face to face where signatures can be obtained 'live' during the review however the following forms of approval are acceptable:

1. Physical signatures obtained face to face or via fax
2. Digital signatures tied cryptographically to the signer
3. /es/ in the signature block provided that a separate digitally signed e-mail indicating the signer's approval is provided and kept with the document

The Chair of the governing Integrated Project Team (IPT), Business Sponsor, IT Program Manager, and the Project Manager are required to sign. Please annotate signature blocks accordingly.

**REVIEW DATE: 4/02/13**

**SCRIBE:** [REDACTED]

\_\_\_\_\_/es/\_\_\_\_\_  
4/3/13  
Signed: [REDACTED] *IT Project Manager* Date:  
*Integrated Project Team (IPT) Chair*

\_\_\_\_\_/es/\_\_\_\_\_  
4/5/13  
Signed: Date:  
[REDACTED] *Business Sponsor*

[REDACTED] Project Manager,  
OI&T, Product Development  
Lab Data Sharing & Interoperability (LDSI)  
04/02/2013  
Date